

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

2006 ACCESSORIES & EQUIPMENT

Doors - Lucerne

SPECIFICATIONS

FASTENER TIGHTENING SPECIFICATIONS

Fastener Tightening Specifications

Application	Specification	
	Metric	English
Front Door Body Side Hinge Bolts	33 N.m	24 lb ft
Front Door Inside Door Handle Screw	3 N.m	27 lb in
Front Door Lock Screws	10 N.m	89 lb in
Front Door Lock Striker Screws	20 N.m	15 lb ft
Front Door Outer Belt Sealing Strip Screws	2 N.m	18 lb in
Front Door Side Hinge Bolts	33 N.m	24 lb ft
Front Door Window Channel Retaining Screws	2 N.m	18 lb in
Lower Door Hinge Side Bolts	33 N.m	24 lb ft
Outside Door Handle Bolts	10 N.m	89 lb in
Outside Rearview Mirror Motor Screws	2 N.m	18 lb in
Outside Rearview Mirror Nuts	6 N.m	54 lb in
Pull Cup/Trim Plate Bezel Screws	3 N.m	27 lb in
Pull Handle Trim Retaining Screw	3 N.m	27 lb in
Rear Door Body Side Hinge Bolts	33 N.m	24 lb ft
Rear Door Lock Screws	10 N.m	89 lb in
Rear Door Lock Striker Screw	20 N.m	15 lb ft
Rear Door Outer Belt Sealing Strip Screws	2 N.m	18 lb in
Rear Door Side Hinge Bolts	33 N.m	24 lb ft
Window Regulator Bolts	10 N.m	89 lb in
Window Regulator Motor Bolts	6 N.m	53 lb in
Upper Door Hinge Keeper Bolt	33 N.m	24 lb ft

SCHEMATIC AND ROUTING DIAGRAMS

POWER WINDOW SCHEMATICS

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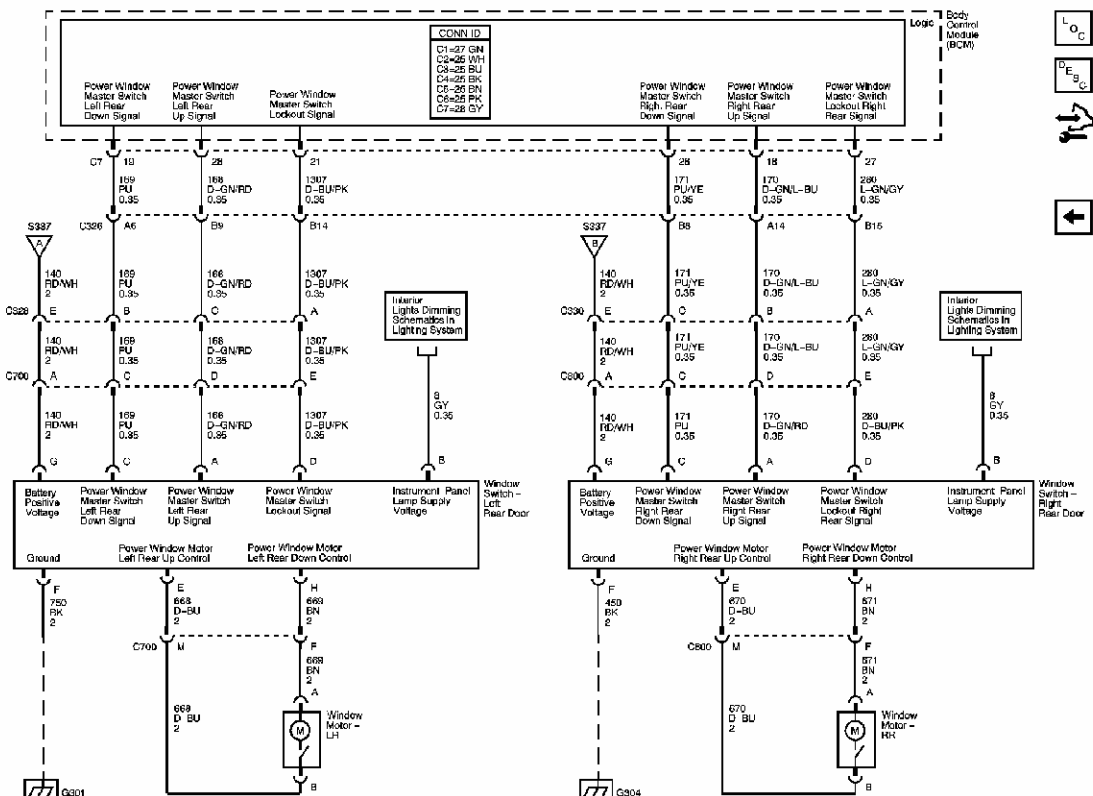


Fig. 2: Rear Window Switches & Motors Schematic
Courtesy of GENERAL MOTORS CORP.

DOOR LOCK/INDICATOR SCHEMATICS

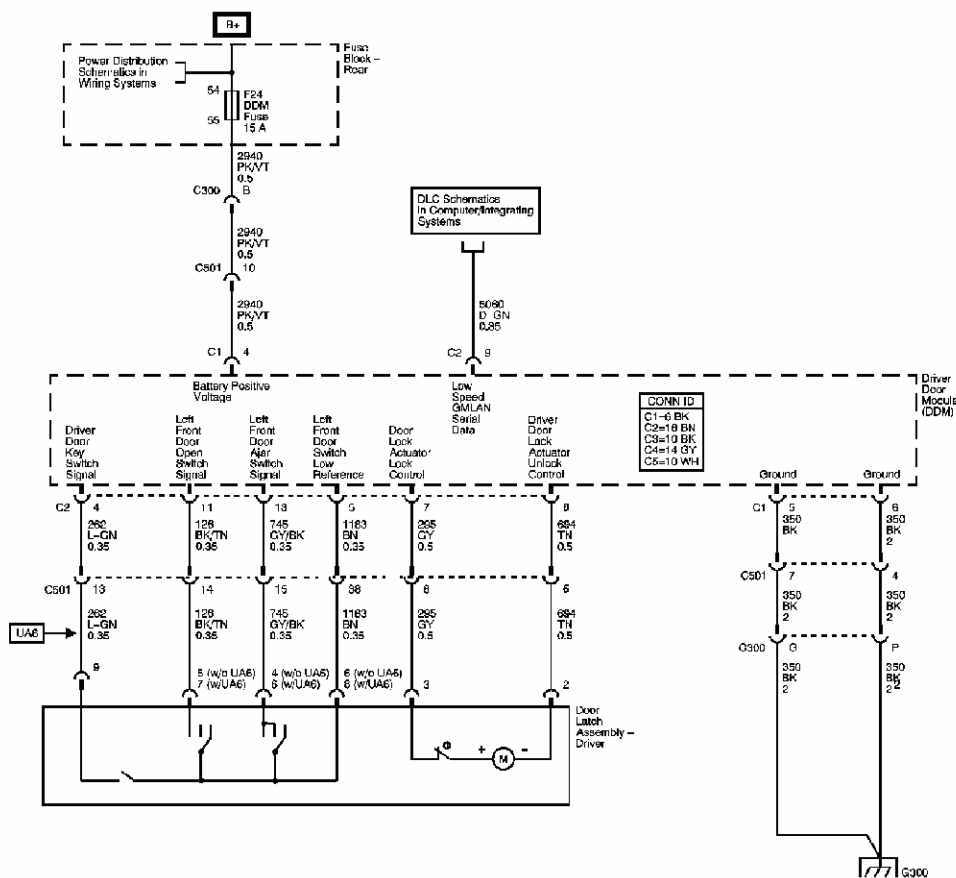


Fig. 3: Driver Door Module Power & Ground Schematic
Courtesy of GENERAL MOTORS CORP.

2006 Buick Lucerne CXS

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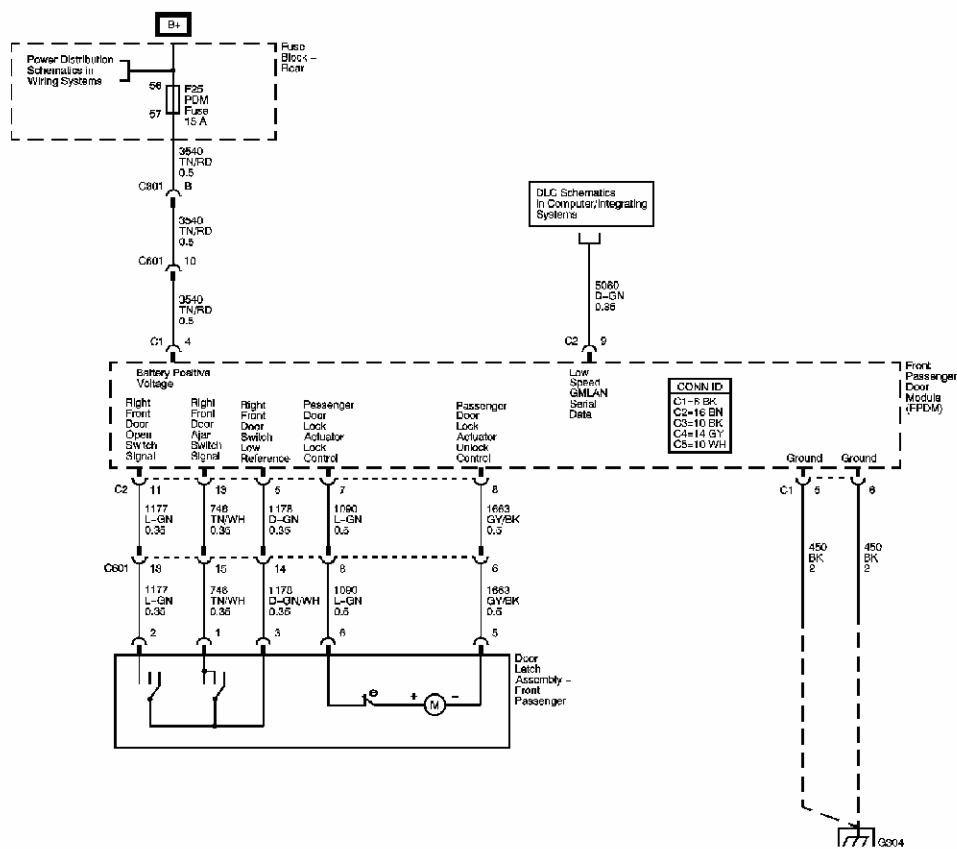


Fig. 4: Front Passenger Door Module Power & Ground Schematic
Courtesy of GENERAL MOTORS CORP.

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne



2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

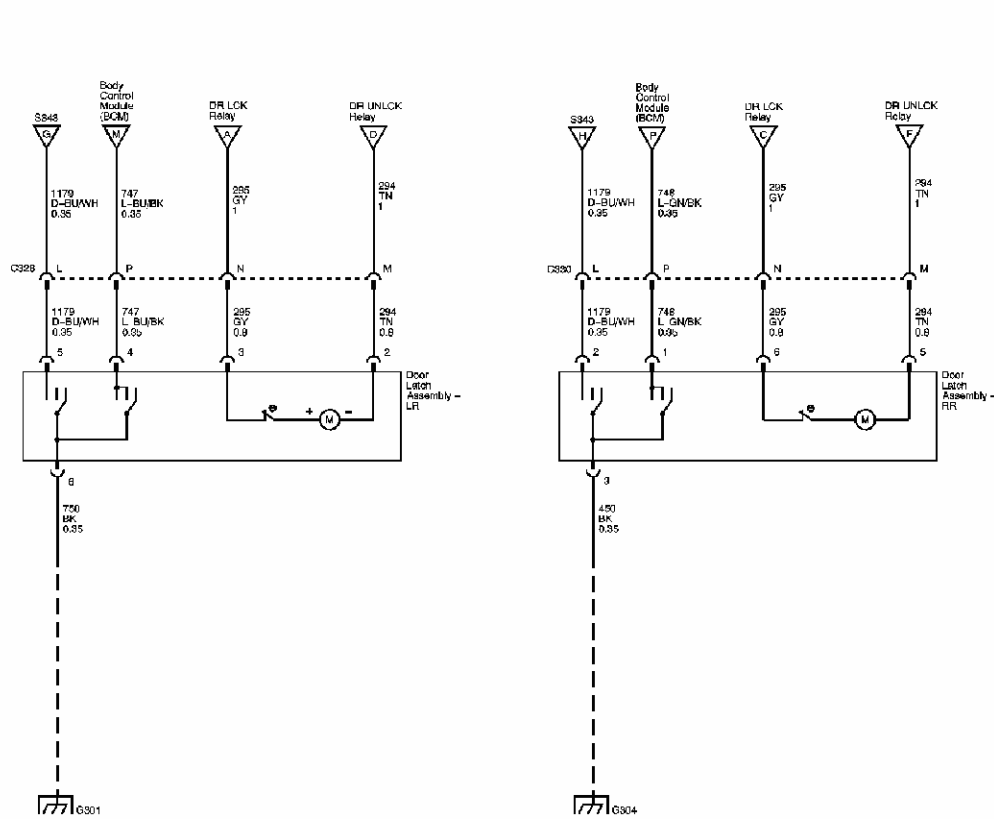


Fig. 6: Rear Door Latch Assemblies Schematic
Courtesy of GENERAL MOTORS CORP.

OUTSIDE REARVIEW MIRROR SCHEMATICS

2006 Buick Lucerne CXS

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LOG

DESC

UP

DOWN

RIGHT

LEFT

5-Volt Reference

Driver Door Module (DDM)

Outside Rearview Mirror Switch

CONN ID

C1=6 BK
C2=18 BN
C3=10 BK
C4=14 GY
C5=10 WH

Horizontal Motor

Vertical Motor

Outside Rearview Mirror - Driver

CONN ID

C1=12 GY
C2=6 GY

Driver Mirror Vertical Position Sensor Signal

Low Reference

Driver Mirror Horizontal Position Sensor Signal

Left Mirror Motor Left Control

Left Mirror Motor Right Control

Left Mirror Motor Up/Down Control

5-Volt Reference

784 D-GN/TN 0.35

873 BNL-GN 0.35

788 GY/PU 0.35

81 WH 0.35

329 TN/RD 0.35

89 L-GN 0.35

672 D-BU 0.35

784 D-GN/TN 0.35

873 BNL-GN 0.35

788 GY/PU 0.35

81 WH 0.35

329 TN/RD 0.35

89 L-GN 0.35

672 D-BU 0.35

784 D-GN/TN 0.35

873 BNL-GN 0.35

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2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

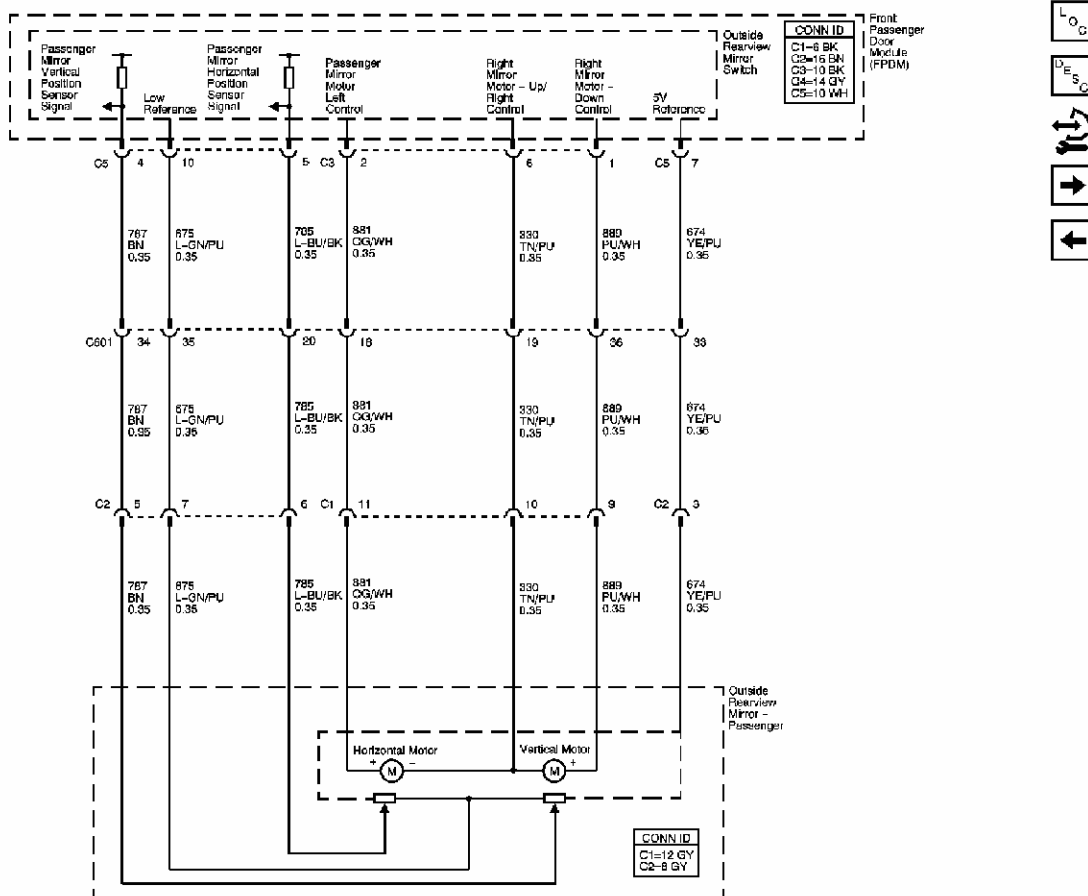


Fig. 8: Passenger Outside Rearview Mirror Schematic
 Courtesy of GENERAL MOTORS CORP.

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

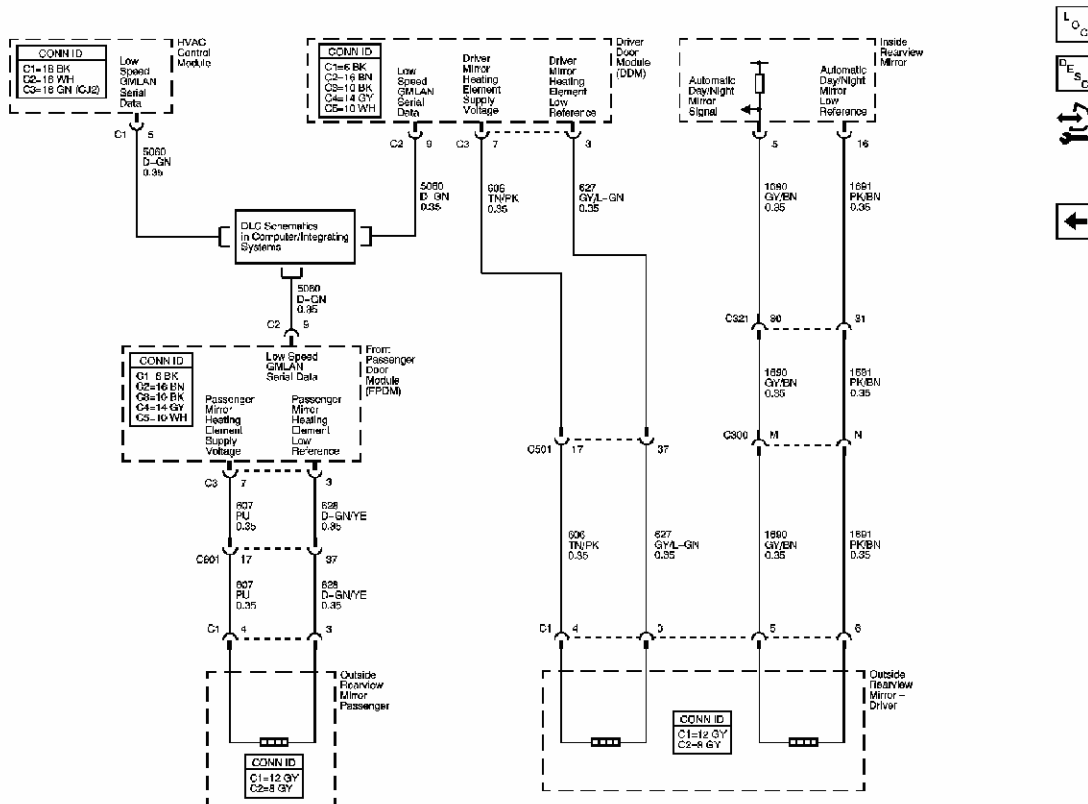


Fig. 9: Heated Mirrors w/DR2 Schematic
Courtesy of GENERAL MOTORS CORP.

DOOR CONTROL MODULE SCHEMATICS

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

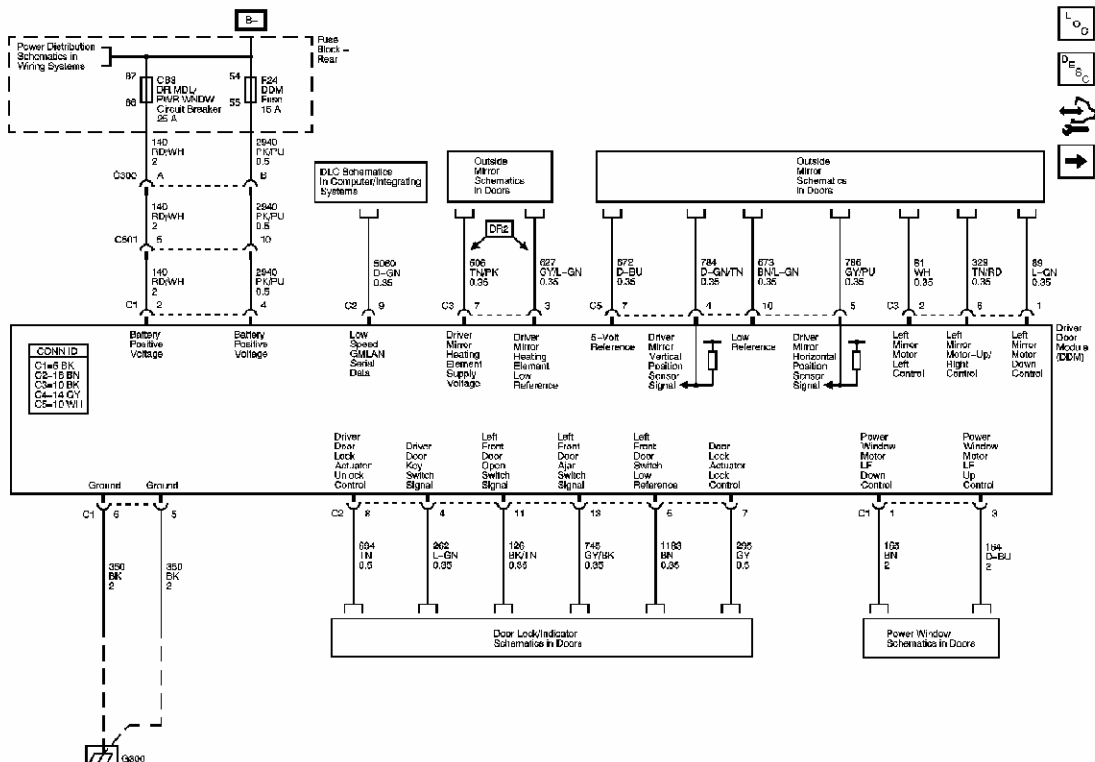


Fig. 10: Driver Door Module Schematic
Courtesy of GENERAL MOTORS CORP.

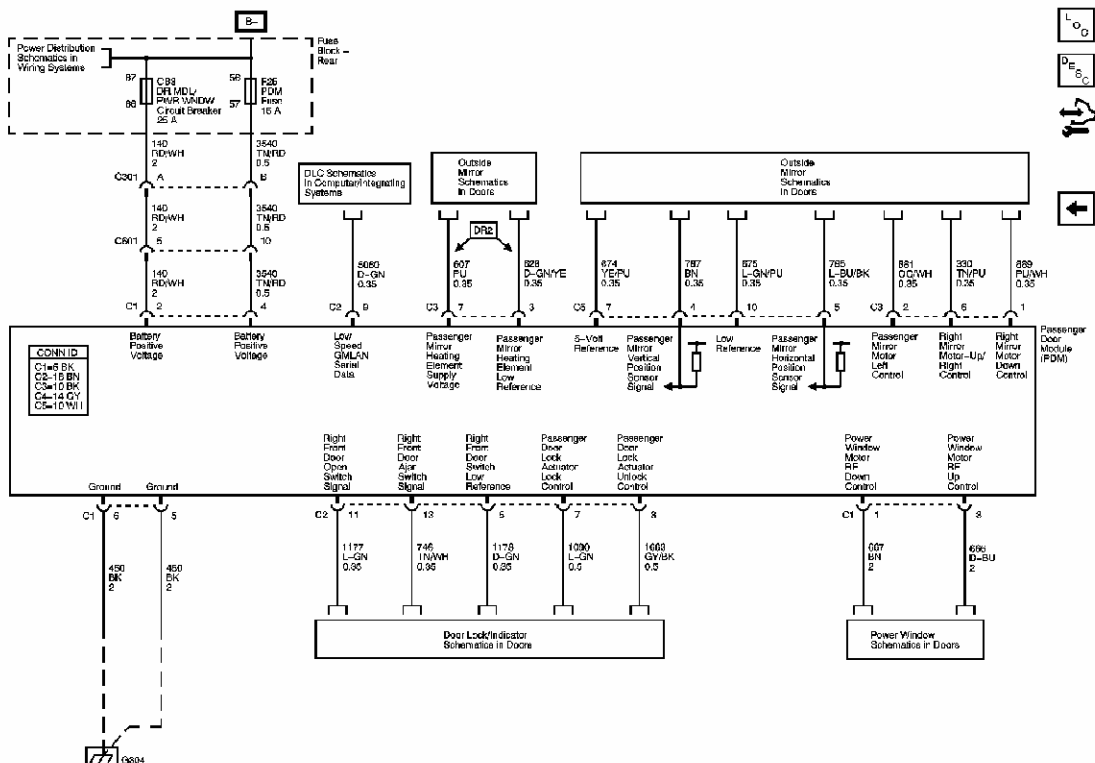


Fig. 11: Front Passenger Door Module Schematic
 Courtesy of GENERAL MOTORS CORP.

COMPONENT LOCATOR

POWER DOOR SYSTEMS COMPONENT VIEWS

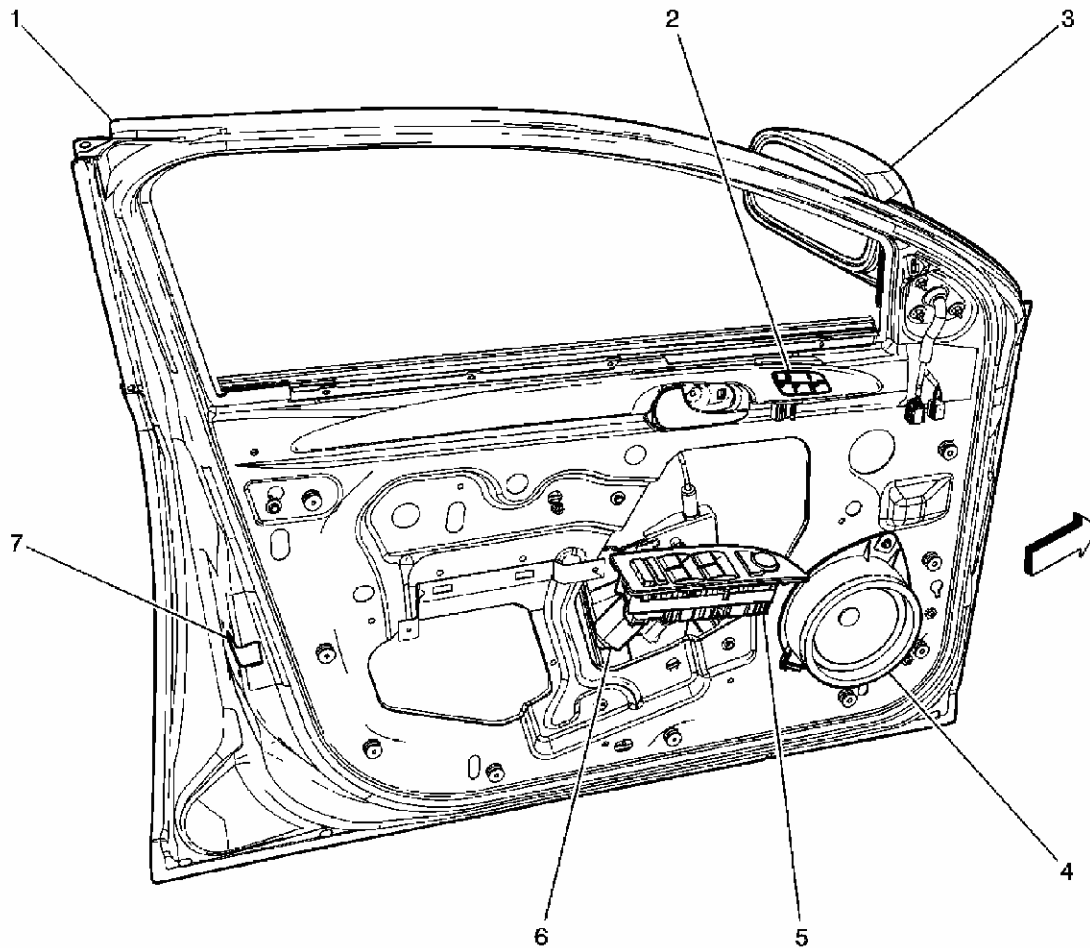


Fig. 12: View Of Driver Door
 Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 12

Callout	Component Name
1	Door Frame
2	Heated and Cooled Seat Switch - Driver (KA1, KB6, A45)
3	Outside Rearview Mirror - Driver
4	Speaker - LF Door
5	Driver Door Module (DDM)
6	Window Motor - Driver

7

Door Latch Assembly - Driver

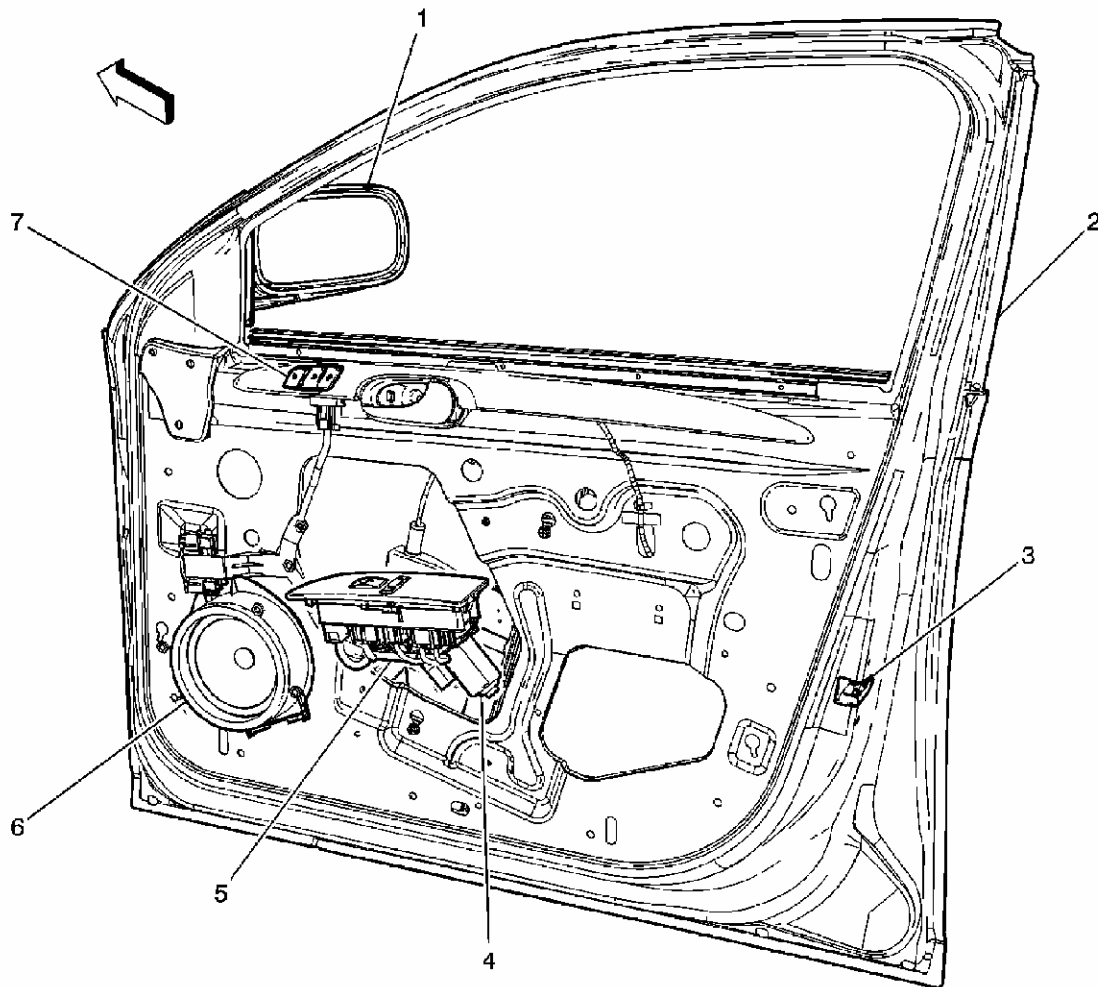


Fig. 13: View Of Passenger Door
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 13

Callout	Component Name
1	Outside Rearview Mirror - Passenger
2	Door Frame
3	Door Latch Assembly - Front Passenger
4	Window Motor - Driver
5	Front Passenger Door Module (FPDM)
6	Speaker - RF Door
7	Heated and Cooled Seat Switch - Front Passenger (KA1, KB6)

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

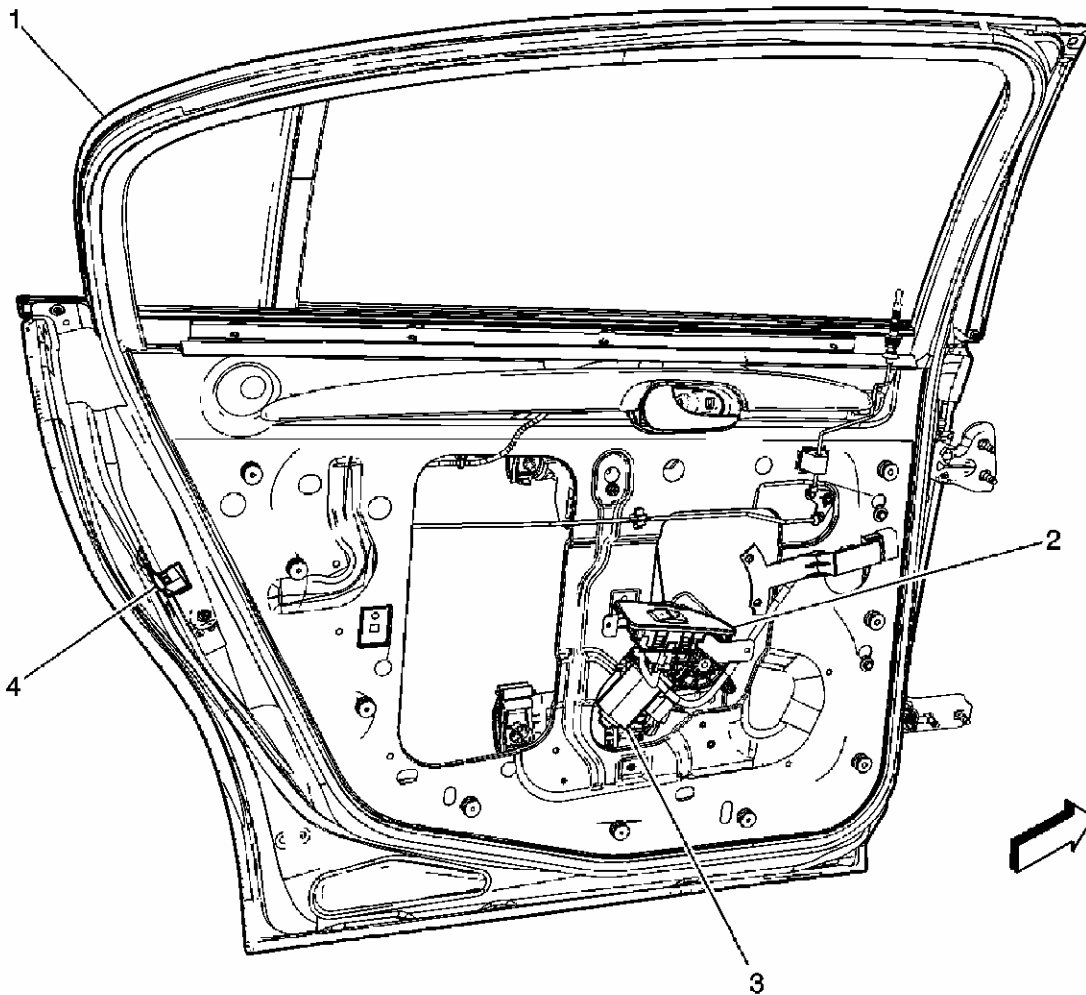


Fig. 14: View Of Left Rear Door
Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 14

Callout	Component Name
1	Door Frame
2	Door Window Switch - LR
3	Window Motor - LR
4	Door Latch Assembly - LR

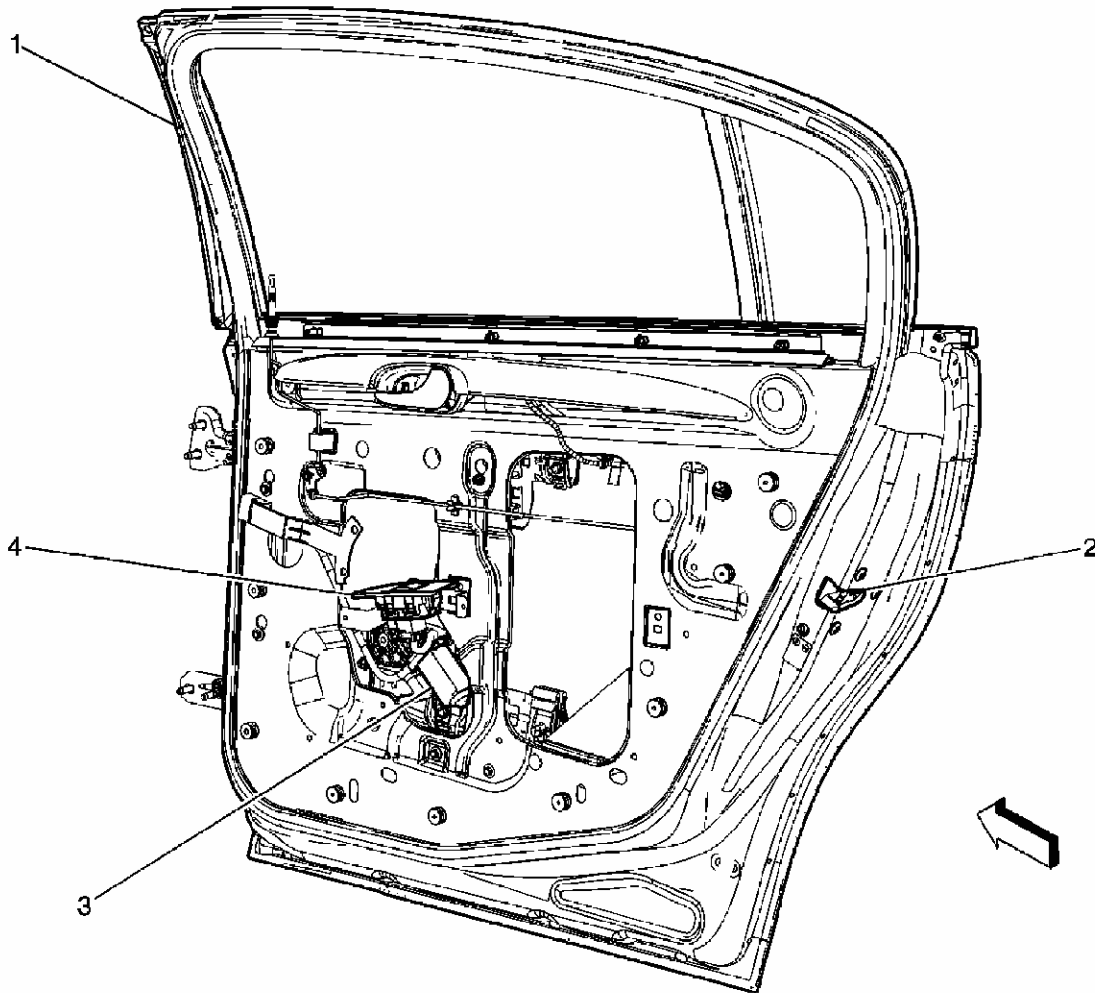


Fig. 15: View Of Right Rear Door
 Courtesy of GENERAL MOTORS CORP.

Callouts For Fig. 15

Callout	Component Name
1	Door Frame
2	Door Latch Assembly - RR
3	Window Motor - RR
4	Door Window Switch - RR

POWER DOOR SYSTEMS CONNECTOR END VIEWS

Door Latch Assembly - Driver (UA6)

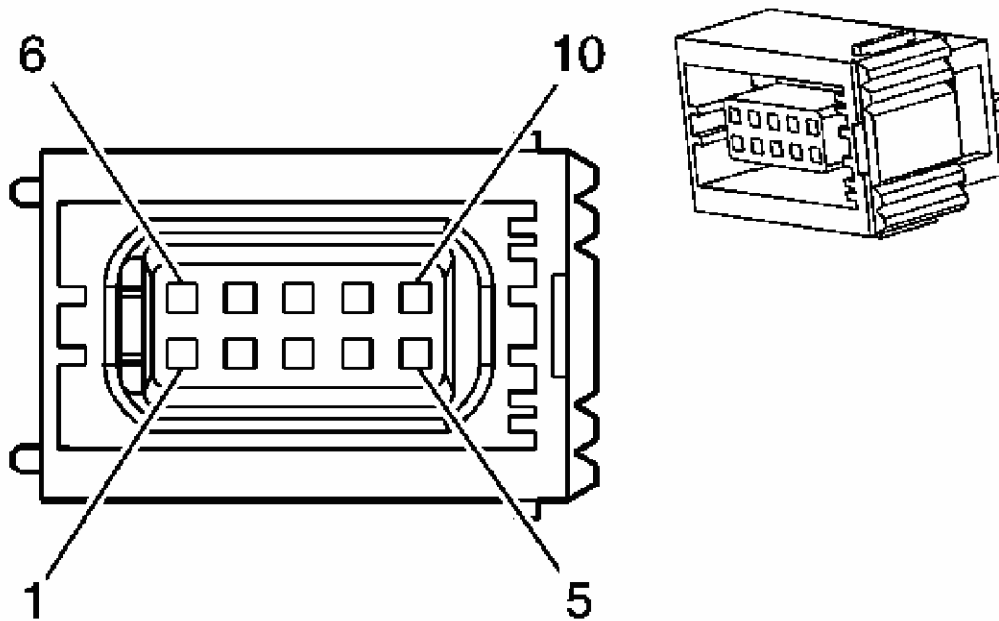


Fig. 16: Door Latch Assembly - Driver (UA6) Connector End View
 Courtesy of GENERAL MOTORS CORP.

Power Door Systems Connector End Views

Connector Part Information

- OEM: 6-1355688-1
- Service: See Catalog
- Description: 10-Way F (BK)

Terminal Part Information

- Terminal/Tray: See Terminal Repair Kit
- Core/Insulation Crimp: See Terminal Repair Kit
- Release Tool/Test Probe: See Terminal Repair Kit

Door Latch Assembly - Driver (UA6)

Pin	Wire Color	Circuit No.	Function
1	-	-	Not Used
2	TN	694	Driver Door Lock Actuator Unlock Control
3	GY	295	Door Lock Actuator Lock Control

2006 Buick Lucerne CXS

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4-5	-	-	Not Used
6	GY/BK	745	Left Front Door Ajar Switch Signal
7	BK/TN	126	Left Front Door Open Switch Signal
8	BN	1183	Left Front Door Switch Low Reference
9	L-GN	262	Driver Door Key Switch Signal
10	-	-	Not Used

Door Latch Assembly - Driver (w/o UA6)

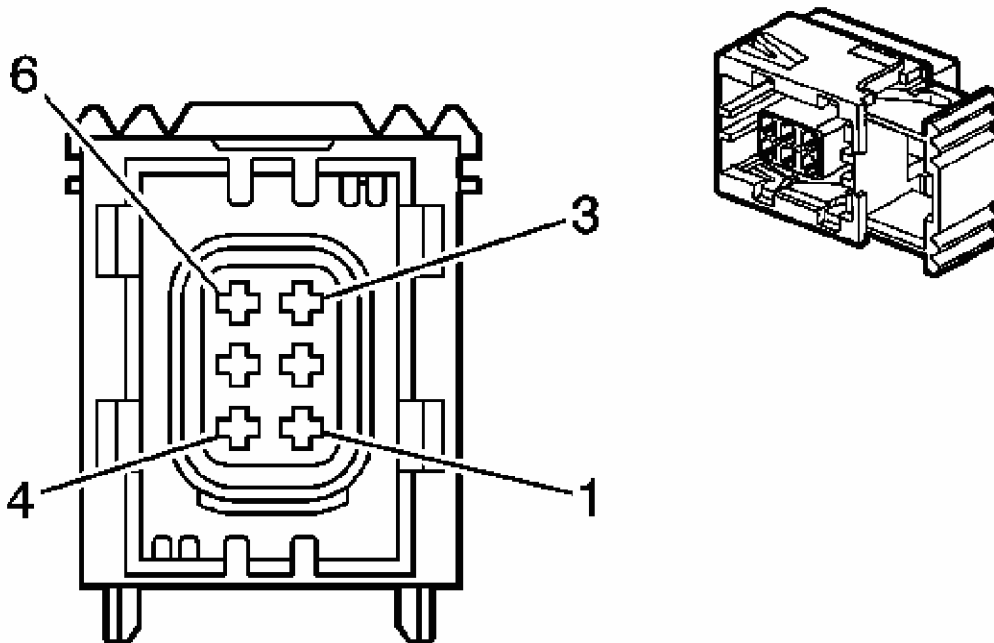


Fig. 17: Door Latch Assembly - Driver (w/o UA6) Connector End View
Courtesy of GENERAL MOTORS CORP.

Power Door Systems Connector End Views

Connector Part Information

- OEM: 6-1355683-1
- Service: See Catalog
- Description: 6-Way F (BK)

Terminal Part Information

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

- Terminal/Tray: See Terminal Repair Kit
- Core/Insulation Crimp: See Terminal Repair Kit
- Release Tool/Test Probe: See Terminal Repair Kit

Door Latch Assembly - Driver (w/o UA6)

Pin	Wire Color	Circuit No.	Function
1	-	-	Not Used
2	TN	694	Driver Door Lock Actuator Unlock Control
3	GY	295	Door Lock Actuator Lock Control
4	GY/BK	745	Left Front Door Ajar Switch Signal
5	BK/TN	126	Left Front Door Open Switch Signal
6	BN	1183	Left Front Door Switch Low Reference

Door Latch Assembly - Front Passenger

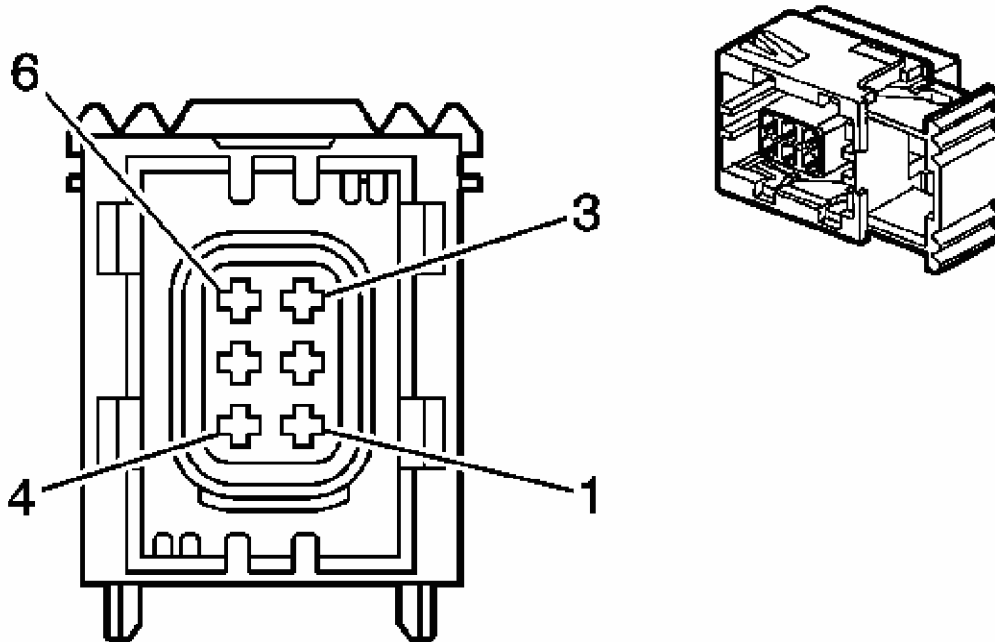


Fig. 18: Door Latch Assembly - Front Passenger Connector End View
Courtesy of GENERAL MOTORS CORP.

2006 Buick Lucerne CXS

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Power Door Systems Connector End Views

Connector Part Information

- OEM: 6-1355683-1
- Service: See Catalog
- Description: 6-Way F (BK)

Terminal Part Information

- Terminal/Tray: See Terminal Repair Kit
- Core/Insulation Crimp: See Terminal Repair Kit
- Release Tool/Test Probe: See Terminal Repair Kit

Door Latch Assembly - Front Passenger

Pin	Wire Color	Circuit No.	Function
1	TN/WH	746	Right Front Door Ajar Switch Signal
2	L-GN	1177	Right Front Door Open Switch Signal
3	D-GN/WH	1178	Right Front Door Switch Low Reference
4	-	-	Not Used
5	GY/BK	1663	Passenger Door Lock Actuator Unlock Control
6	L-GN	1090	Passenger Door Lock Actuator Lock Control

Door Latch Assembly - LR

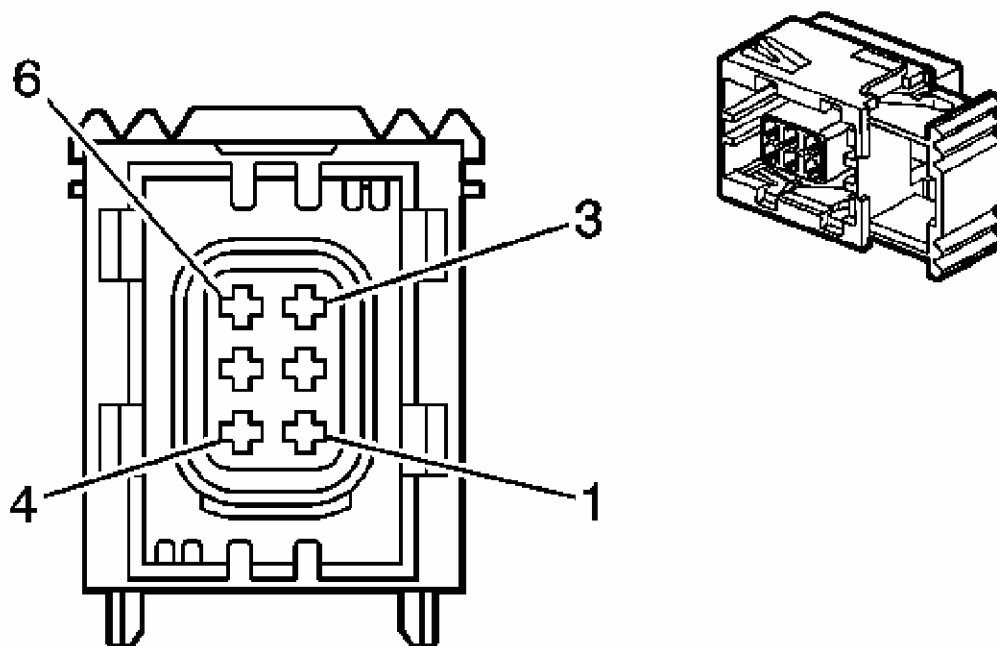


Fig. 19: Door Latch Assembly - LR Connector End View
 Courtesy of GENERAL MOTORS CORP.

Power Door Systems Connector End Views

Connector Part Information

- OEM: 6-1355683-1
- Service: See Catalog
- Description: 6-Way F (BK)

Terminal Part Information

- Terminal/Tray: See Terminal Repair Kit
- Core/Insulation Crimp: See Terminal Repair Kit
- Release Tool/Test Probe: See Terminal Repair Kit

Door Latch Assembly - LR

Pin	Wire Color	Circuit No.	Function
1	-	-	Not Used
2	TN	294	Door Lock Actuator Unlock Control
3	GY	295	Door Lock Actuator Lock Control

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

4	L-BU/BK	747	Left Rear Door Ajar Switch Signal
5	D-BU/WH	1179	Left Rear Door Open Switch Signal
6	BK	750	Ground

Door Latch Assembly - RR

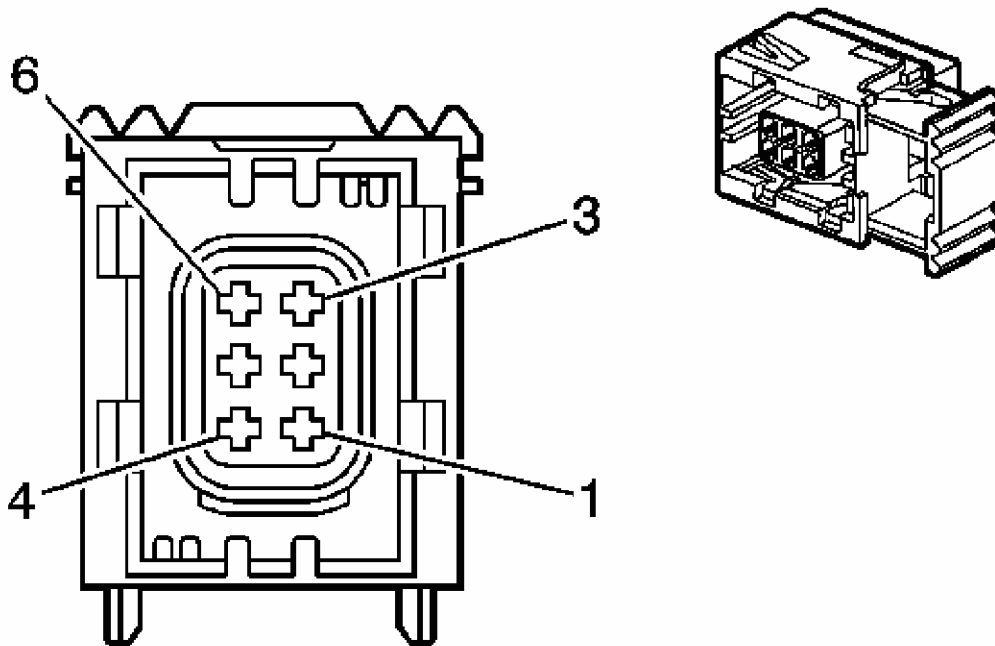


Fig. 20: Door Latch Assembly - RR Connector End View
Courtesy of GENERAL MOTORS CORP.

Power Door Systems Connector End Views

Connector Part Information

- OEM: 6-1355683-1
- Service: See Catalog
- Description: 6-Way F (BK)

Terminal Part Information

- Terminal/Tray: See Terminal Repair Kit
- Core/Insulation Crimp: See Terminal Repair Kit
- Release Tool/Test Probe: See Terminal Repair Kit

Door Latch Assembly - RR

Pin	Wire Color	Circuit No.	Function
1	L-GN/BK	748	Right Rear Door Ajar Switch Signal
2	D-BU/WH	1179	Right Rear Door Open Switch Signal
3	BK	450	Ground
4	-	-	Not Used
5	TN	294	Door Lock Actuator Unlock Control
6	GY	295	Door Lock Actuator Lock Control

Driver Door Module (DDM) C1

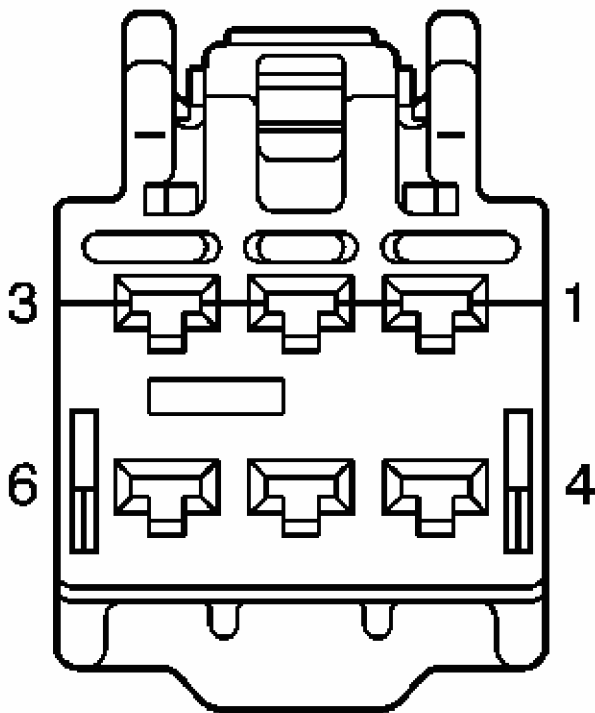


Fig. 21: Driver Door Module (DDM) C1 Connector End View
 Courtesy of GENERAL MOTORS CORP.

Power Door Systems Connector End Views

Connector Part Information

- OEM: 6098-4607

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

- Service: See Catalog
- Description: 6-Way F (BK)

Terminal Part Information

- Terminal/Tray: 8100-4443/22
- Core/Insulation Crimp: E/A
- Release Tool/Test Probe: 15315247/J-35616-35 (VT)

Driver Door Module (DDM) C1

Pin	Wire Color	Circuit No.	Function
1	BN	165	Power Window Motor Left Front Down Control
2	RD/WH	140	Battery Positive Voltage
3	D-BU	164	Power Window Left Front Up Control
4	PK/PU	2940	Battery Positive Voltage
5-6	BK	350	Ground

Driver Door Module (DDM) C2

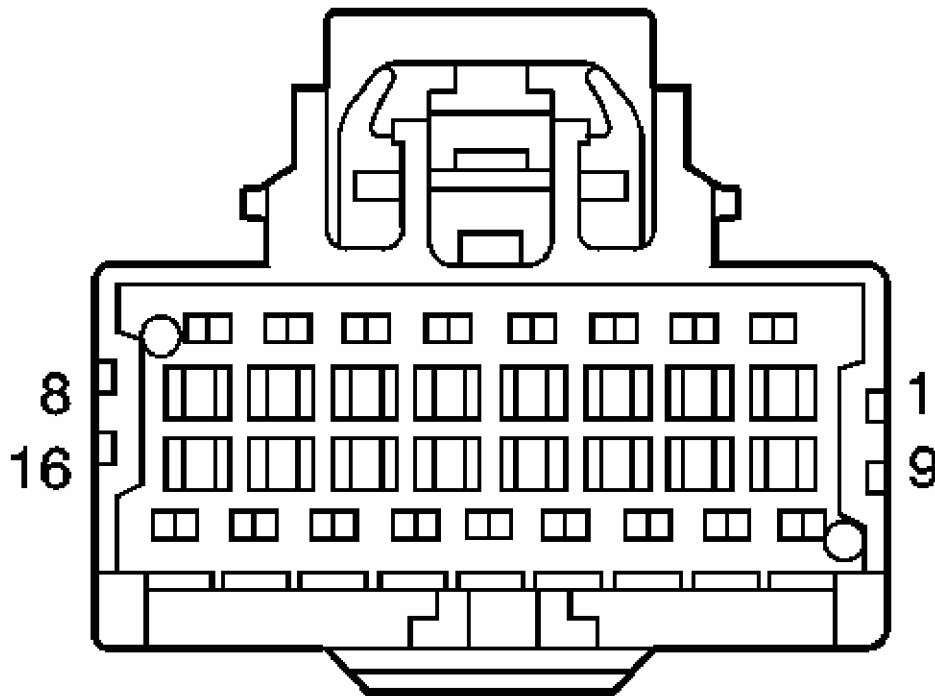


Fig. 22: Driver Door Module (DDM) C2 Connector End View
 Courtesy of GENERAL MOTORS CORP.

Power Door Systems Connector End Views

Connector Part Information

- OEM: 7283-9078-80
- Service: 15136074
- Description: 16-Way F (BN)

Terminal Part Information

- Pins: 4, 5, 7, 8, 9, 11, 13
- Terminal/Tray: 7116-4618-02/14
- Core/Insulation Crimp: P/P
- Release Tool/Test Probe: J-38125-215/J-35616-64B (L-BU)

Driver Door Module (DDM) C2

Pin	Wire Color	Circuit No.	Function

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

1-3	-	-	Not Used
4	L-GN	262	Driver Door Key Switch Signal
5	BN	1183	Left Front Door Switch Low Reference
6	-	-	Not Used
7	GY	295	Door Lock Actuator Lock Control
8	TN	694	Driver Door Lock Actuator Unlock Control
9	D-GN	5060	Low Speed GMLAN Serial Data
10	-	-	Not Used
11	BK/TN	126	Left Front Door Open Switch Signal
12	-	-	Not Used
13	GY/BK	745	Left Front Door Ajar Switch Signal
14-16	-	-	Not Used

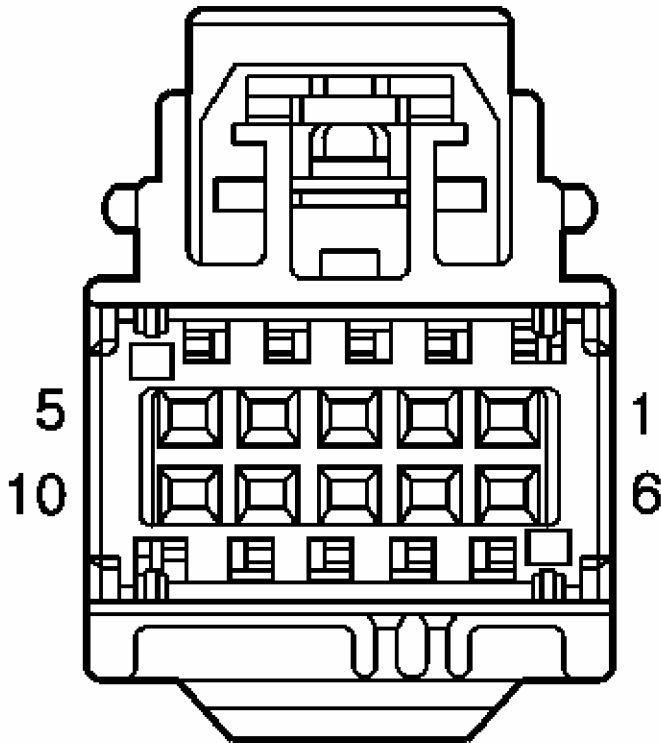
Driver Door Module (DDM) C3

Fig. 23: Driver Door Module (DDM) C3 Connector End View
Courtesy of GENERAL MOTORS CORP.

Power Door Systems Connector End Views

Connector Part Information

- OEM: 7283-9040-30
- Service: See Catalog
- Description: 10-Way F (BK)

Terminal Part Information

- Pins: 1, 2, 3, 6, 7, 8, 10
- Terminal/Tray: 7116-4618-02/14
- Core/Insulation Crimp: P/P
- Release Tool/Test Probe: J-38125-215/J-35616-64B (L-BU)

Driver Door Module (DDM) C3

Pin	Wire Color	Circuit No.	Function
1	L-GN	89	Left Mirror Motor Down Control
2	WH	81	Left Mirror Motor Left Control
3	GY/L-GN	627	Driver Mirror Heating Element Low Reference
4-5	-	-	Not Used
6	TN/RD	329	Left Mirror Motor - Up/Right Control
7	TN/PK	606	Driver Mirror Heating Element Supply Voltage
8	PK	907	Door Open Signal (UA6)
9	-	-	Not Used
10	BN/L-BU	5478	Low Reference (UA6)

Driver Door Module (DDM) C4

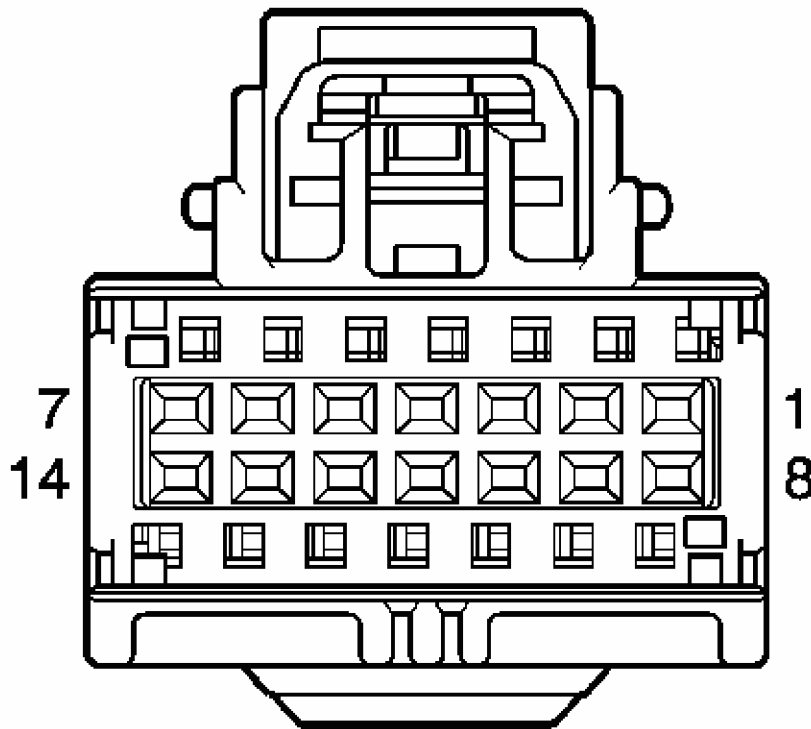


Fig. 24: Driver Door Module (DDM) C4 Connector End View
Courtesy of GENERAL MOTORS CORP.

Power Door Systems Connector End Views

Connector Part Information

- OEM: 7283-9065-40
- Service: See Catalog
- Description: 14-Way F (GY)

Terminal Part Information

- Pins: 1, 2, 3, 5, 6, 7, 9, 10, 11, 12, 13, 14
- Terminal/Tray: See Terminal Repair Kit
- Core/Insulation Crimp: See Terminal Repair Kit
- Release Tool/Test Probe: See Terminal Repair Kit

Driver Door Module (DDM) C4

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2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

Pin	Wire Color	Circuit No.	Function
1	WH/BK	6177	Driver Heated Seat Medium Indicator Control
2	D-GN	1661	Driver Heated Seat High Indicator Control
3	L-GN/BK	6098	Driver Heated Seat Cool Switch Signal
4	-	-	Not Used
5	TN	612	Memory Recall Switch Signal (KA1/KB6/A45)
6	D-BU	6172	Driver Heated Seat Back Cushion Switch Signal
7	GY	6175	Driver Heated Seat Back Only Mode Switch Signal
8	-	-	Not Used
9	L-BU	1662	Driver Heated Seat Low Indicator Control
10	BN	6173	Driver Heated Seat Back Cushion Indicator Control
11	PU	6174	Driver Heated Seat Back Only Mode Indicator Control
12	OG	6178	Driver Heated Seat Cool Indicator Control
13	YE/PU	6176	Driver Heated Seat Switch Lamp Dimming
14	GY/BK	5979	Memory Function Switch Supply Voltage (KA1/KB6/A45)

Driver Door Module (DDM) C5 (A45)

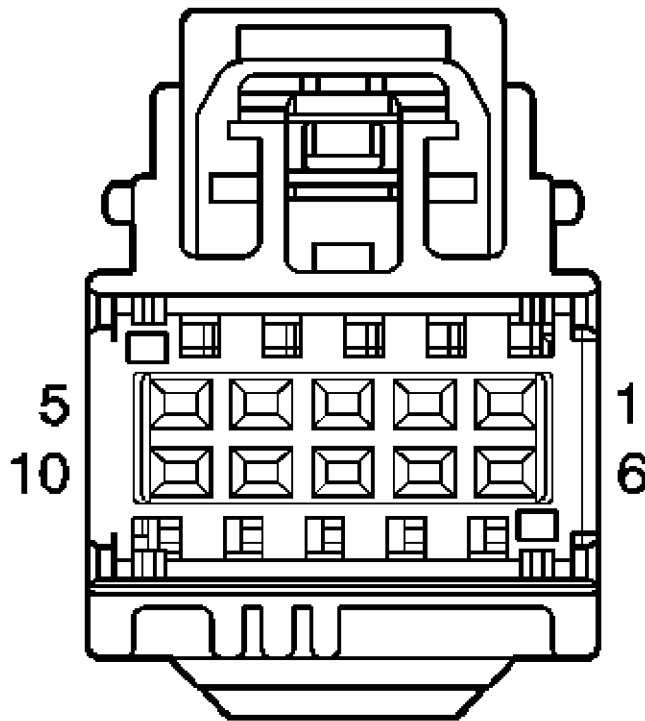


Fig. 25: Driver Door Module (DDM) C5 (A45) Connector End View
 Courtesy of GENERAL MOTORS CORP.

Power Door Systems Connector End Views

Connector Part Information

- OEM: 7283-9045
- Service: See Catalog
- Description: 10-Way F (WH)

Terminal Part Information

- Pins: 4, 5, 7, 10
- Terminal/Tray: 7116-4618-02/14
- Core/Insulation Crimp: P/P
- Release Tool/Test Probe: J-38125-215/J-35616-64B (L-BU)

Driver Door Module (DDM) C5 (A45)

Pin	Wire Color	Circuit No.	Function
-----	------------	-------------	----------

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

1-3	-	-	Not Used
4	D-GN/TN	784	Driver Mirror Vertical Position Sensor Signal
5	GY/PU	786	Driver Mirror Horizontal Position Sensor Signal
6	-	-	Not Used
7	D-BU	672	5-Volt Reference
8-9	-	-	Not Used
10	BN/L-GN	673	Low Reference

Front Passenger Door Module (FPDM) C1

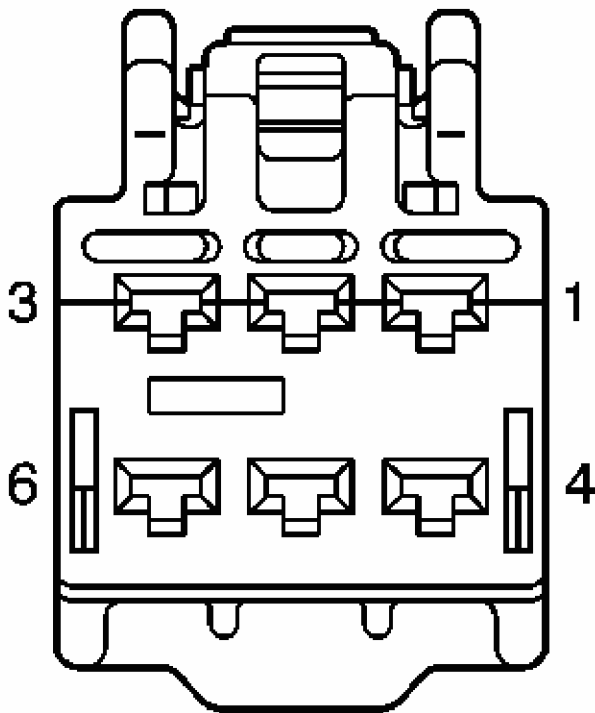


Fig. 26: Front Passenger Door Module (FPDM) C1 Connector End View
Courtesy of GENERAL MOTORS CORP.

Power Door Systems Connector End Views

Connector Part Information

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

- OEM: 6098-4607
- Service: See Catalog
- Description: 6-Way F (BK)

Terminal Part Information

- Terminal/Tray: 8100-4443/22
- Core/Insulation Crimp: E/A
- Release Tool/Test Probe: 15315247/J-35616-35 (VT)

Front Passenger Door Module (FPDM) C1

Pin	Wire Color	Circuit No.	Function
1	BN	667	Power Window Motor Right Front Down Control
2	RD/WH	140	Battery Positive Voltage
3	D-BU	666	Power Window Motor Right Front Up Control
4	TN/RD	3540	Battery Positive Voltage
5-6	BK	450	Ground

Front Passenger Door Module (FPDM) C2

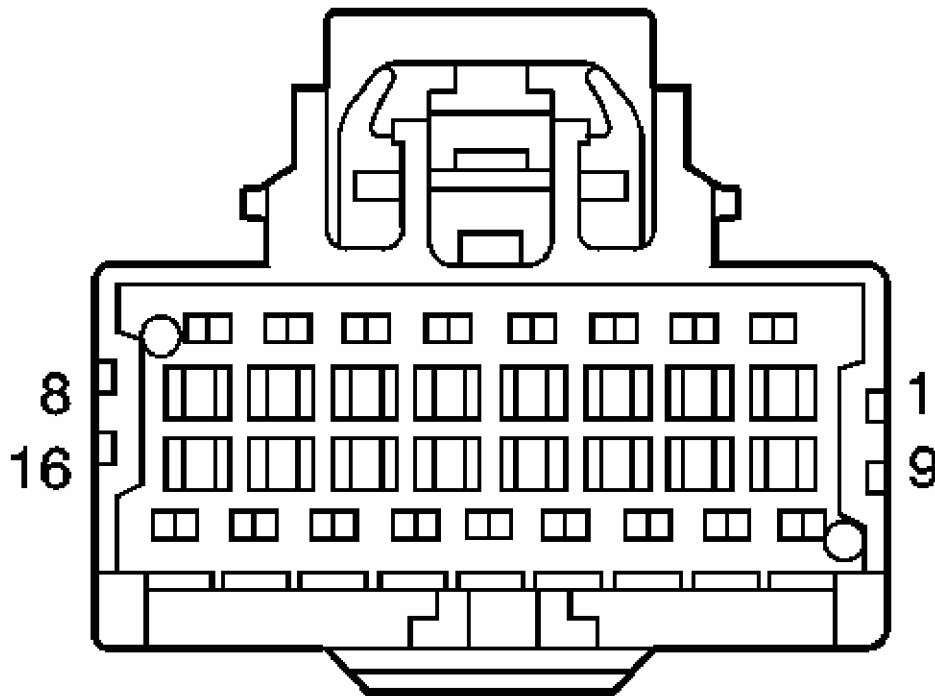


Fig. 27: Front Passenger Door Module (FPDM) C2 Connector End View
 Courtesy of GENERAL MOTORS CORP.

Power Door Systems Connector End Views

Connector Part Information

- OEM: 7283-9078-80
- Service: 15136074
- Description: 16-Way F (BN)

Terminal Part Information

- Pins: 5, 7, 8, 9, 11, 13
- Terminal/Tray: 7116-4618-02/14
- Core/Insulation Crimp: P/P
- Release Tool/Test Probe: J-38125-215/J-35616-64B (L-BU)

Front Passenger Door Module (FPDM) C2

Pin	Wire Color	Circuit No.	Function

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

1-4	-	-	Not Used
5	D-GN/WH	1178	Right Front Door Switch Low Reference
6	-	-	Not Used
7	L-GN	1090	Passenger Door Lock Actuator Lock Control
8	GY/BK	1663	Passenger Door Lock Actuator Unlock Control
9	D-GN	5060	Low Speed GMLAN Serial Data
10	-	-	Not Used
11	L-GN	1177	Right Front Door Open Switch Signal
12	-	-	Not Used
13	TN/WH	746	Right Front Door Ajar Switch Signal
14-16	-	-	Not Used

Front Passenger Door Module (FPDM) C3

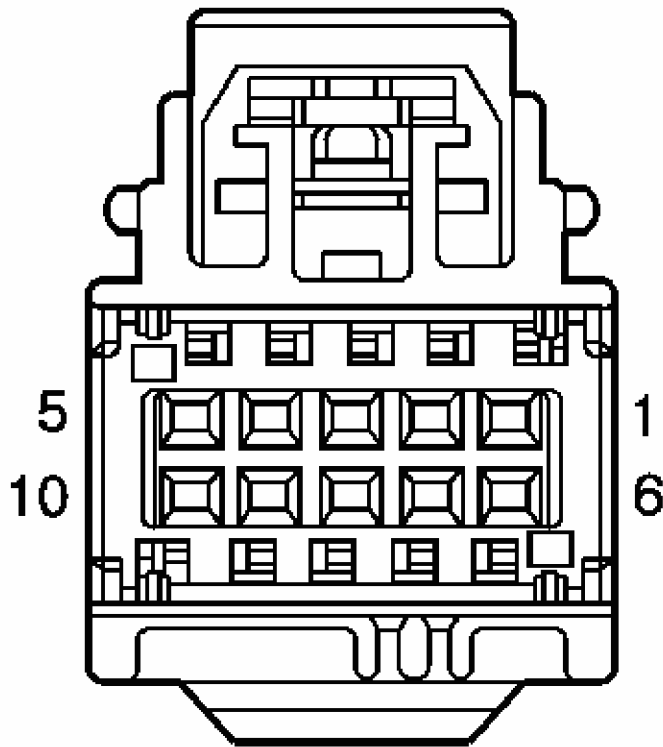


Fig. 28: Front Passenger Door Module (FPDM) C3 Connector End View
Courtesy of GENERAL MOTORS CORP.

Power Door Systems Connector End Views

Connector Part Information

- OEM: 7283-9040-30
- Service: See Catalog
- Description: 10-Way F (BK)

Terminal Part Information

- Pins: 1, 2, 3, 6, 7, 10
- Terminal/Tray: 7116-4618-02/14
- Core/Insulation Crimp: P/P
- Release Tool/Test Probe: J-38125-215/J-35616-64B (L-BU)

Front Passenger Door Module (FPDM) C3

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

Pin	Wire Color	Circuit No.	Function
1	PU/WH	889	Right Mirror Motor Down Control
2	OG/WH	881	Passenger Mirror Motor Left Control
3	D-GN/YE	628	Passenger Mirror Heating Element Low Reference
4-5	-	-	Not Used
6	TN/PU	330	Right Mirror Motor - Up/Right Control
7	PU	607	Passenger Mirror Heating Element Supply Voltage
8-10	-	-	Not Used

Front Passenger Door Module (FPDM) C4 (KA1/KB6)

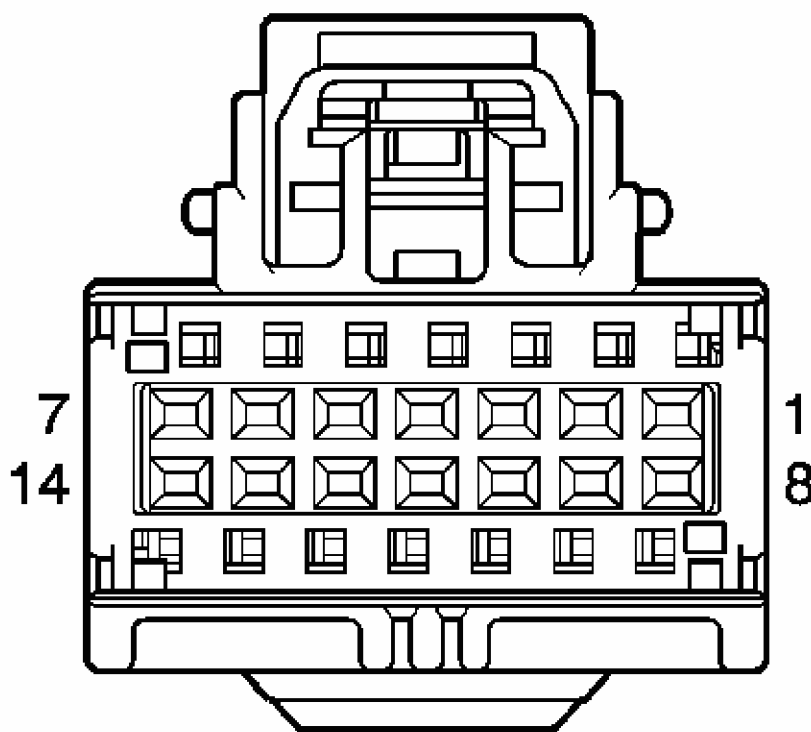


Fig. 29: Front Passenger Door Module (FPDM) C4 (KA1/KB6) Connector End View
Courtesy of GENERAL MOTORS CORP.

Power Door Systems Connector End Views

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

Connector Part Information

- OEM: 7283-9065-40
- Service: See Catalog
- Description: 14-Way F (GY)

Terminal Part Information

- Pins: 1, 2, 3, 4, 6, 7, 9, 10, 11, 12, 13
- Terminal/Tray: See Terminal Repair Kit
- Core/Insulation Crimp: See Terminal Repair Kit
- Release Tool/Test Probe: See Terminal Repair Kit

Front Passenger Door Module (FPDM) C4 (KA1/KB6)

Pin	Wire Color	Circuit No.	Function
1	WH/BK	6185	Front Passenger Heated Seat Medium Indicator Control
2	YE	1685	Front Passenger Heated Seat High Indicator Control
3	TN/D-BU	6187	Passenger Heated Seat Cool Switch Signal
4	PK	6184	Front Passenger Heated Seat Switch Low Reference
5	-	-	Not Used
6	D-BU	6180	Passenger Heated Seat Switch Back Cushion Switch Signal
7	GY	6182	Passenger Heated Seat Back Only Mode Switch Signal
8	-	-	Not Used
9	TN	1686	Front Passenger Heated Seat Low Indicator Control
10	BN	6179	Passenger Heated Seat Back Cushion Indicator Control
11	PU	6181	Passenger Heated Seat Back Only Mode Indicator Control
12	OG	6186	Passenger Heated Seat Cool Indicator Control
13	L-BU	6183	Front Passenger Heated Seat Switch Lamp Dimming
14	-	-	Not Used

Front Passenger Door Module (FPDM) C5 (A45)

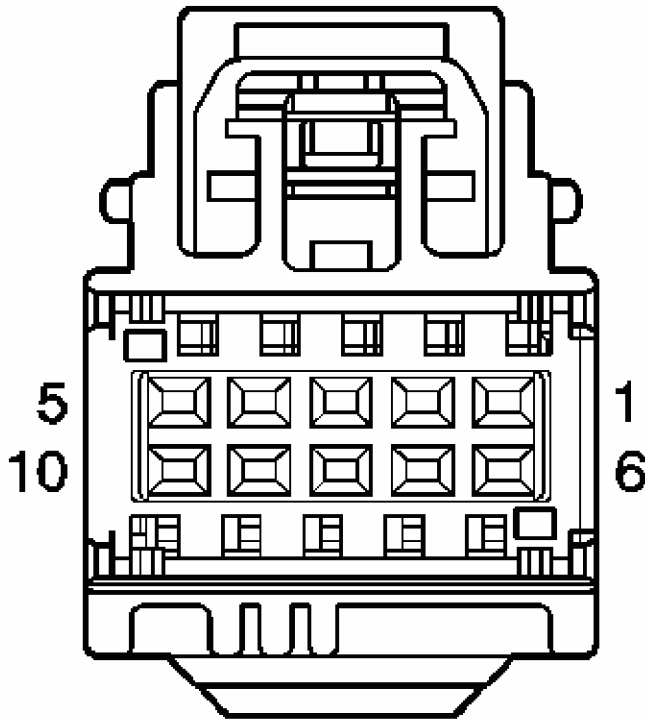


Fig. 30: Front Passenger Door Module (FPDM) C5 (A45) Connector End View
Courtesy of GENERAL MOTORS CORP.

Power Door Systems Connector End Views

Connector Part Information

- OEM: 7283-9045
- Service: See Catalog
- Description: 10-Way F (WH)

Terminal Part Information

- Pins: 4, 5, 7, 10
- Terminal/Tray: 7116-4618-02/14
- Core/Insulation Crimp: P/P
- Release Tool/Test Probe: J-38125-215/J-35616-64B (L-BU)

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

Front Passenger Door Module (FPDM) C5 (A45)

Pin	Wire Color	Circuit No.	Function
1-3	-	-	Not Used
4	BN	787	Passenger Mirror Vertical Position Sensor Signal
5	L-BU/BK	785	Passenger Mirror Horizontal Position Sensor Signal
6	-	-	Not Used
7	YE/PU	674	5-Volt Reference
8-9	-	-	Not Used
10	L-GN/PU	675	Low Reference

Outside Rearview Mirror - Driver C1

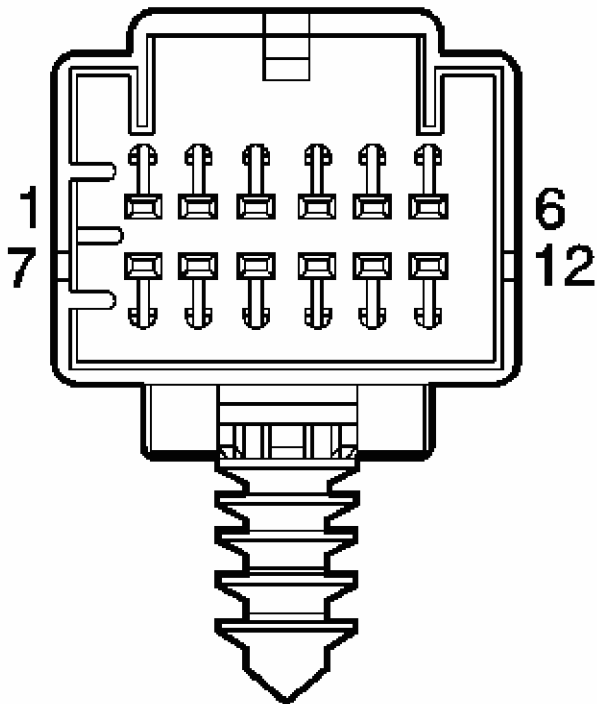


Fig. 31: Outside Rearview Mirror - Driver C1 Connector End View
Courtesy of GENERAL MOTORS CORP.

Power Door Systems Connector End Views

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

Connector Part Information

- OEM: 7282-7696-40
- Service: See Catalog
- Description: 12-Way M (GY)

Terminal Part Information

- Pins: 1, 2, 3, 4, 5, 6, 9, 10, 11
- Terminal/Tray: 7114-4720-08/14
- Core/Insulation Crimp: J/J
- Release Tool/Test Probe: 15315247/J-35616-65B (L-BU)

Outside Rearview Mirror - Driver C1

Pin	Wire Color	Circuit No.	Function
1	L-BU/WH	1314	Left Front Turn Signal Lamp Supply Voltage
2	BN/L-BU	5478	Low Reference
3	GY/L-GN	627	Driver Mirror Heating Element Low Reference
4	TN/PK	606	Driver Mirror Heating Element Supply Voltage
5	GY/BN	1690	Automatic Day/Night Mirror Signal
6	PK/BN	1691	Automatic Day/Night Mirror Low Reference
7-8	-	-	Not Used
9	L-GN	89	Left Mirror Motor Down Control
10	TN/RD	329	Left Mirror Motor - Up/Right Control
11	WH	81	Left Mirror Motor Left Control
12	-	-	Not Used

Outside Rearview Mirror - Driver C2 (A45)

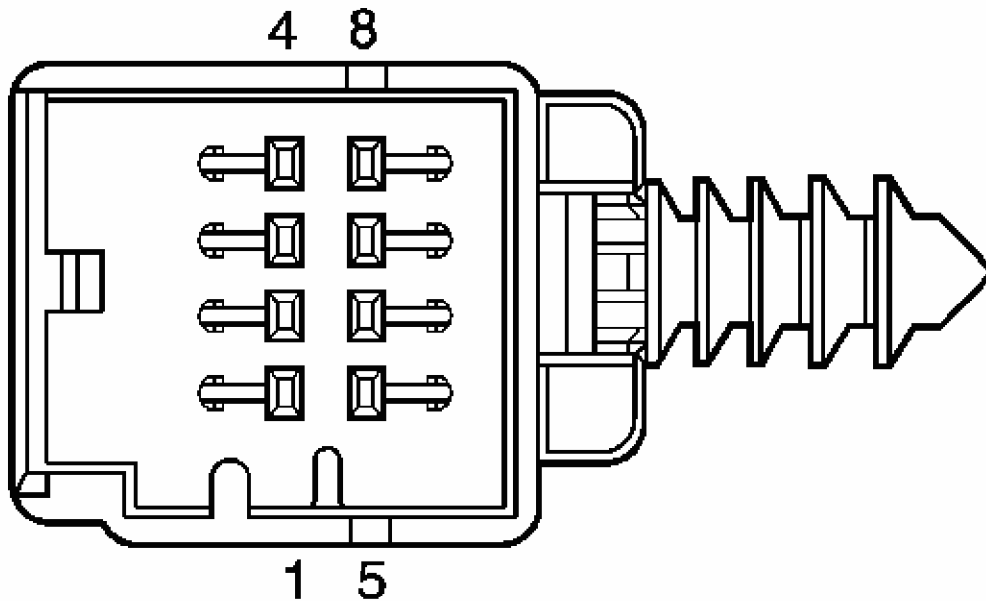


Fig. 32: Outside Rearview Mirror - Driver C2 (A45) Connector End View
 Courtesy of GENERAL MOTORS CORP.

Power Door Systems Connector End Views

Connector Part Information

- OEM: 7282-8870-40
- Service: See Catalog
- Description: 8-Way M (GY)

Terminal Part Information

- Pins: 3, 5, 6, 7
- Terminal/Tray: 7114-4720-08/14
- Core/Insulation Crimp: J/J
- Release Tool/Test Probe: 15315247/J-35616-65B (L-BU)

Outside Rearview Mirror - Driver C2 (A45)

Pin	Wire Color	Circuit No.	Function
1-2	-	-	Not Used
3	D-BU	672	5-Volt Reference

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

4	-	-	Not Used
5	D-GN/TN	784	Driver Mirror Vertical Position Sensor Signal
6	GY/PU	786	Driver Mirror Horizontal Position Sensor Signal
7	BN/L-GN	673	Low Reference
8	-	-	Not Used

Outside Rearview Mirror - Passenger C1

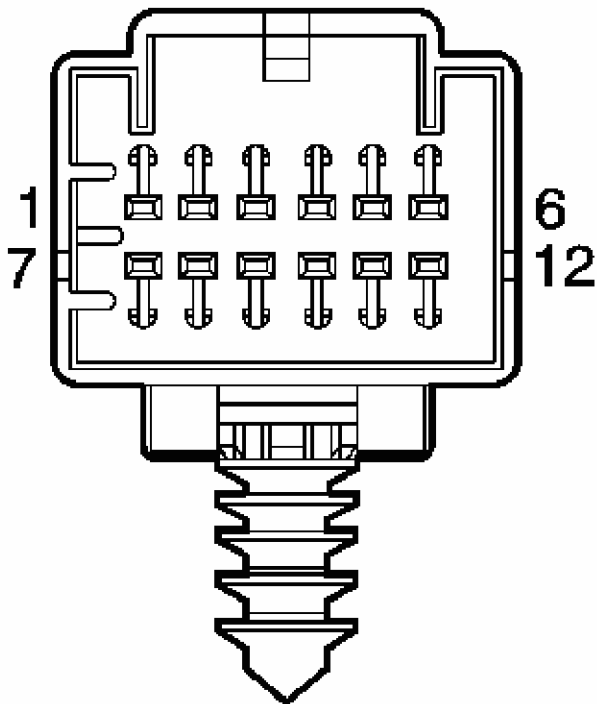


Fig. 33: Outside Rearview Mirror - Passenger C1 Connector End View
Courtesy of GENERAL MOTORS CORP.

Power Door Systems Connector End Views

Connector Part Information

- OEM: 7282-7696-40
- Service: See Catalog

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

- Description: 12-Way M (GY)

Terminal Part Information

- Pins: 1, 2, 3, 4, 9, 10, 11
- Terminal/Tray: 7114-4720-08/14
- Core/Insulation Crimp: J/J
- Release Tool/Test Probe: 15315247/J-35616-65B (L-BU)

Outside Rearview Mirror - Passenger C1

Pin	Wire Color	Circuit No.	Function
1	D-BU/WH	1315	Right Front Turn Signal Lamp Supply Voltage
2	BN/L-BU	5478	Low Reference
3	D-GN/YE	628	Passenger Mirror Heating Element Low Reference
4	PU	607	Passenger Mirror Heating Element Supply Voltage
5-8	-	-	Not Used
9	PU/WH	889	Right Mirror Motor Down Control
10	TN/PU	330	Right Mirror Motor - Up/Right Control
11	OG/WH	881	Passenger Mirror Motor Left Control
12	-	-	Not Used

Outside Rearview Mirror - Passenger C2 (A45)

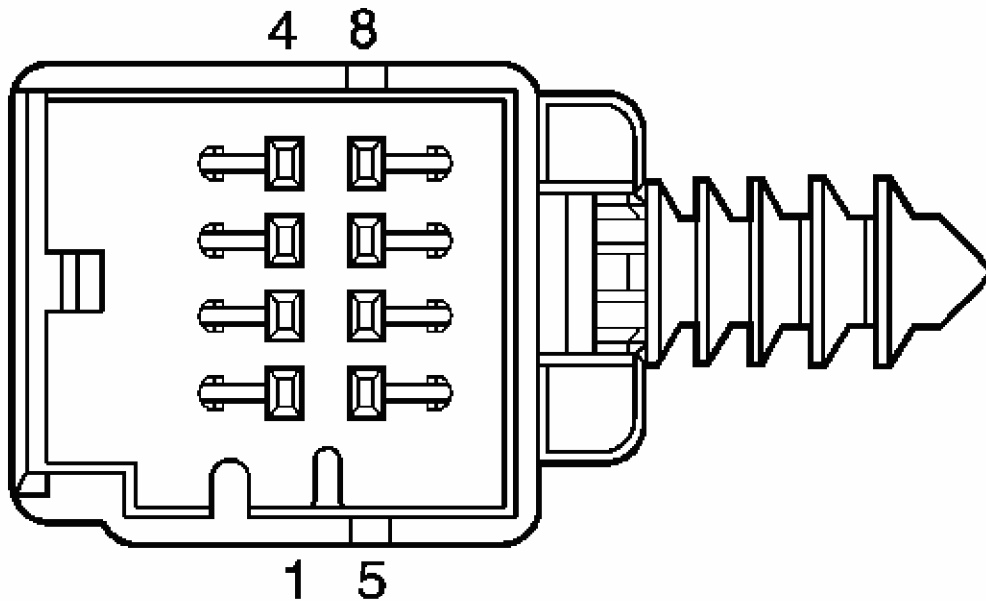


Fig. 34: Outside Rearview Mirror - Passenger C2 (A45) Connector End View
 Courtesy of GENERAL MOTORS CORP.

Power Door Systems Connector End Views

Connector Part Information

- OEM: 7282-8870-40
- Service: See Catalog
- Description: 8-Way M (GY)

Terminal Part Information

- Pins: 3, 5, 6, 7
- Terminal/Tray: 7114-4720-08/14
- Core/Insulation Crimp: J/J
- Release Tool/Test Probe: 15315247/J-35616-65B (L-BU)

Outside Rearview Mirror - Passenger C2 (A45)

Pin	Wire Color	Circuit No.	Function
1-2	-	-	Not Used
3	YE/PU	674	5-Volt Reference

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

4	-	-	Not Used
5	BN	787	Passenger Mirror Vertical Position Sensor Signal
6	L-BU/BK	785	Passenger Mirror Horizontal Position Sensor Signal
7	L-GN/PU	675	Low Reference
8	-	-	Not Used

Window Motor - Driver

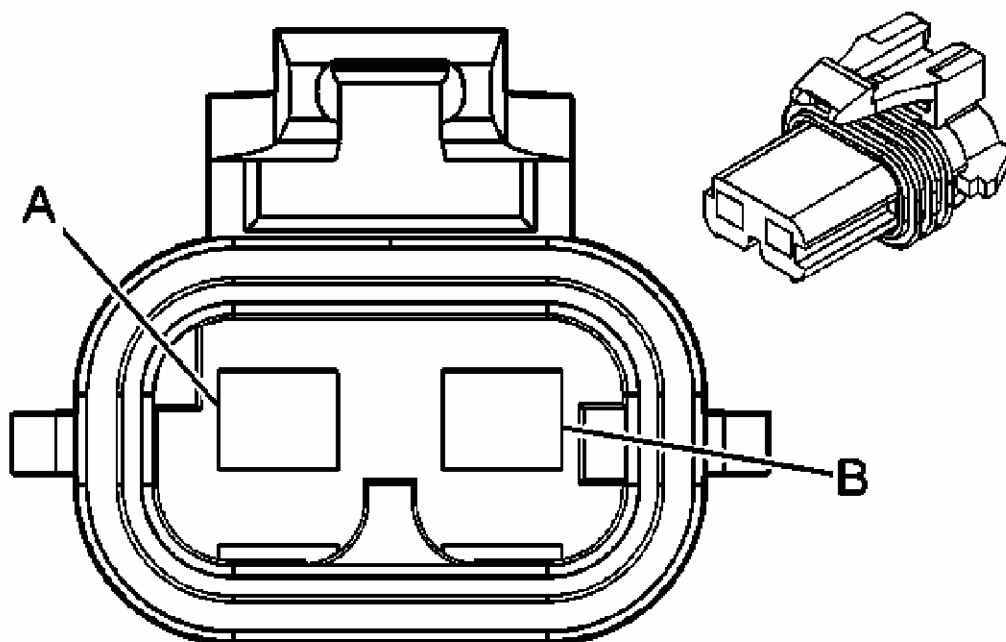


Fig. 35: Window Motor Connector End View
Courtesy of **GENERAL MOTORS CORP.**

Power Door Systems Connector End Views

Connector Part Information

- OEM: 12129487
- Service: See Catalog
- Description: 2-Way F Metri-pack 280 Series, Flexlock, Sealed (GY)

Terminal Part Information

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

- Terminal/Tray: See Terminal Repair Kit
- Core/Insulation Crimp: See Terminal Repair Kit
- Release Tool/Test Probe: See Terminal Repair Kit

Window Motor - Driver

Pin	Wire Color	Circuit No.	Function
A	D-BU	164	Power Window Motor Left Front Up Control
B	BN	165	Power Window Motor Left Front Down Control

Window Motor - Front Passenger

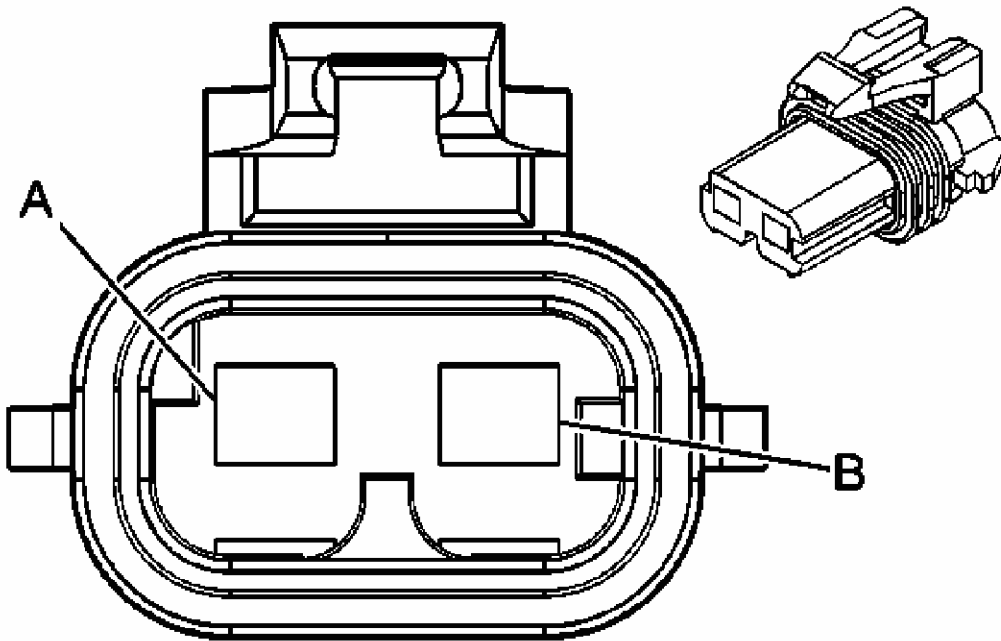


Fig. 36: Window Motor Connector End View
Courtesy of GENERAL MOTORS CORP.

Power Door Systems Connector End Views

Connector Part Information

- OEM: 12129487
- Service: See Catalog

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

- Description: 2-Way F Metri-pack 280 Series, Flexlock, Sealed (GY)

Terminal Part Information

- Terminal/Tray: See Terminal Repair Kit
- Core/Insulation Crimp: See Terminal Repair Kit
- Release Tool/Test Probe: See Terminal Repair Kit

Window Motor - Front Passenger

Pin	Wire Color	Circuit No.	Function
A	D-BU	666	Power Window Motor Right Front Up Control
B	BN	667	Power Window Motor Right Front Down Control

Window Motor - LR

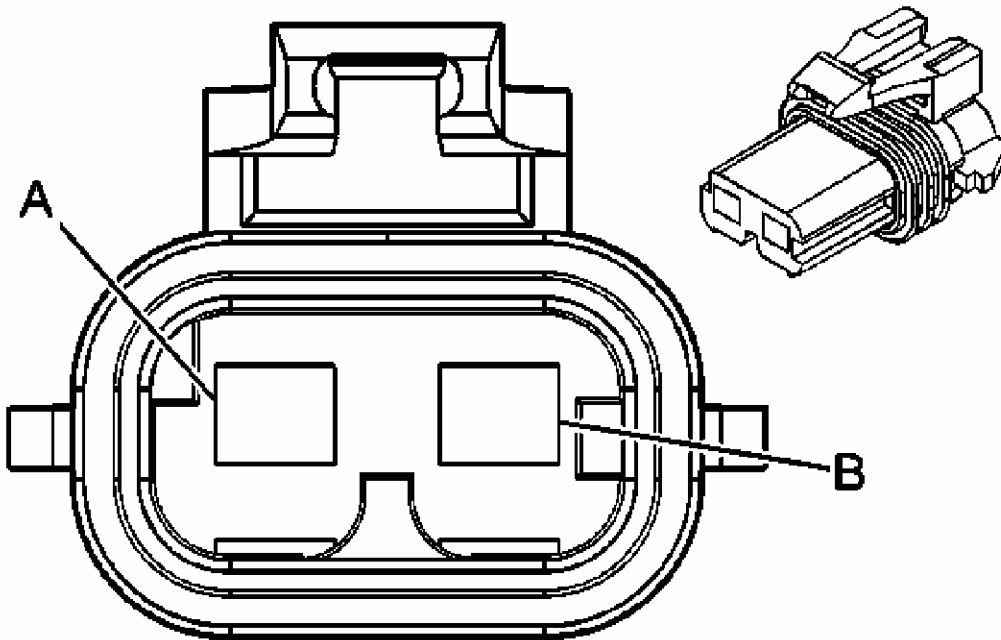


Fig. 37: Window Motor Connector End View
Courtesy of GENERAL MOTORS CORP.

Power Door Systems Connector End Views

Connector Part Information

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

- OEM: 12129487
- Service: See Catalog
- Description: 2-Way F Metri-pack 280 Series, Flexlock, Sealed (GY)

Terminal Part Information

- Terminal/Tray: See Terminal Repair Kit
- Core/Insulation Crimp: See Terminal Repair Kit
- Release Tool/Test Probe: See Terminal Repair Kit

Window Motor - LR

Pin	Wire Color	Circuit No.	Function
A	BN	669	Power Window Motor Left Rear Down Control
B	D-BU	668	Power Window Motor Left Rear Up Control

Window Motor - RR

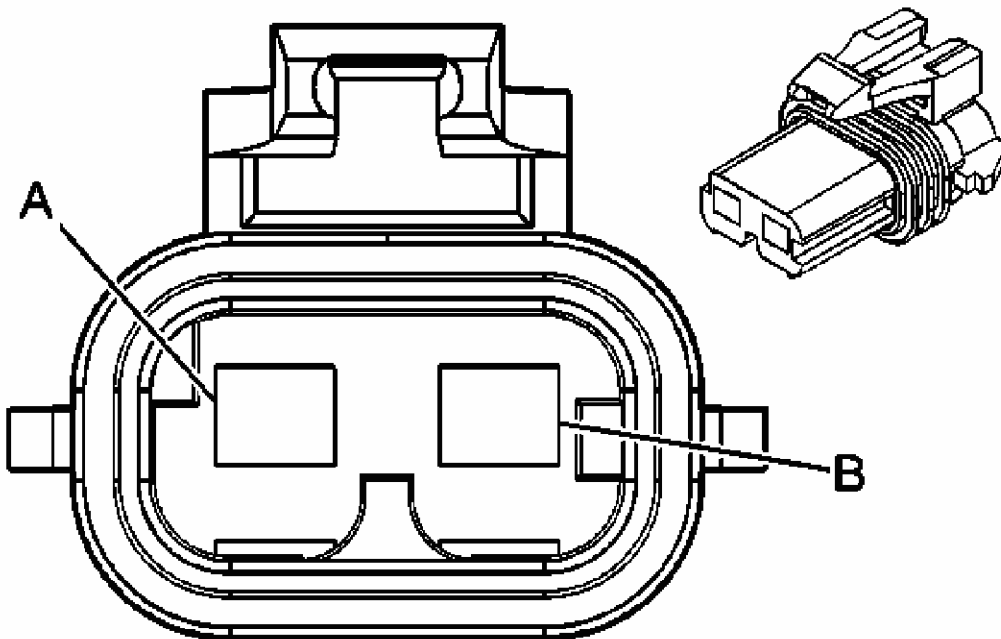


Fig. 38: Window Motor Connector End View
Courtesy of GENERAL MOTORS CORP.

Power Door Systems Connector End Views

Connector Part Information

- OEM: 12129487
- Service: See Catalog
- Description: 2-Way F Metri-pack 280 Series, Flexlock, Sealed (GY)

Terminal Part Information

- Terminal/Tray: See Terminal Repair Kit
- Core/Insulation Crimp: See Terminal Repair Kit
- Release Tool/Test Probe: See Terminal Repair Kit

Window Motor - RR

Pin	Wire Color	Circuit No.	Function
A	BN	671	Power Window Motor Right Rear Down Control
B	D-BU	670	Power Window Motor Right Rear Up Control

Window Switch - Left Rear Door

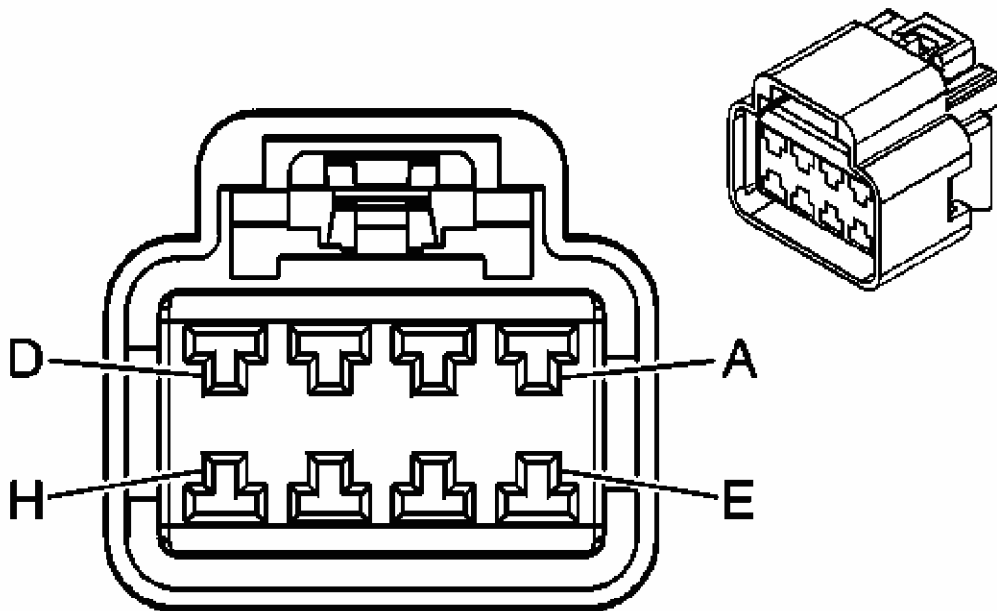


Fig. 39: Window Switch Connector End View
Courtesy of GENERAL MOTORS CORP.

Power Door Systems Connector End Views

Connector Part Information

- OEM: 15326924
- Service: See Catalog
- Description: 8-Way F GT 280 Series (BK)

Terminal Part Information

- Terminal/Tray: See Terminal Repair Kit
- Core/Insulation Crimp: See Terminal Repair Kit
- Release Tool/Test Probe: See Terminal Repair Kit

Window Switch - Left Rear Door

Pin	Wire Color	Circuit No.	Function
A	D-GN/RD	168	Power Window Master Switch Left Rear Up Signal
B	GY	8	Instrument Panel Lamp Supply Voltage
C	PU	169	Power Window Master Switch Left Rear Down Signal
D	D-BU/PK	1307	Power Window Master Switch Lockout Signal
E	D-BU	668	Power Window Motor Left Rear Up Control
F	BK	750	Ground
G	RD/WH	140	Battery Positive Voltage
H	BN	669	Power Window Motor Left Rear Down Control

Window Switch - Right Rear Door

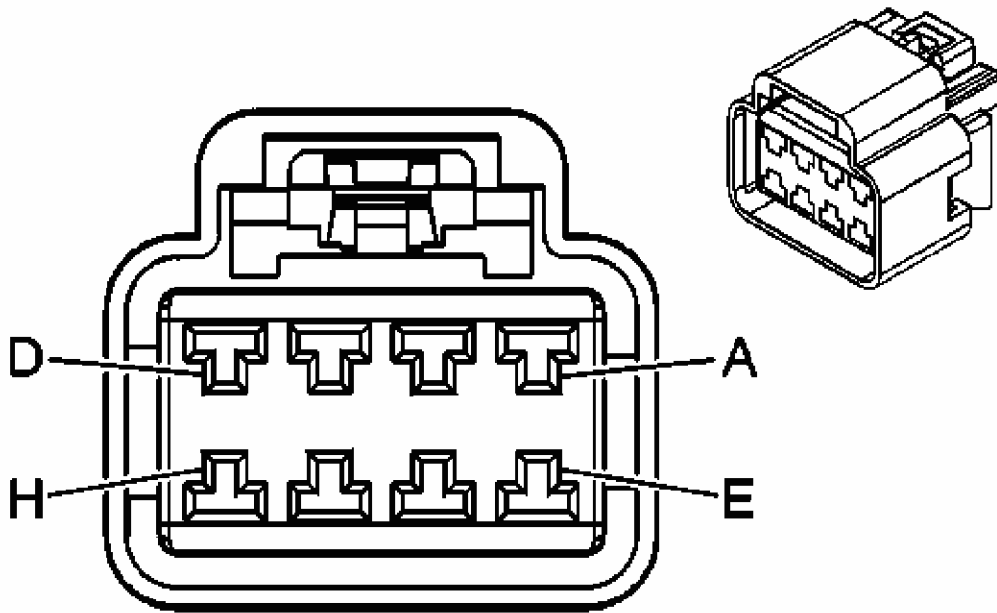


Fig. 40: Window Switch Connector End View
 Courtesy of GENERAL MOTORS CORP.

Power Door Systems Connector End Views

Connector Part Information

- OEM: 15326924
- Service: See Catalog
- Description: 8-Way F GT 280 Series (BK)

Terminal Part Information

- Terminal/Tray: See Terminal Repair Kit
- Core/Insulation Crimp: See Terminal Repair Kit
- Release Tool/Test Probe: See Terminal Repair Kit

Window Switch - Right Rear Door

Pin	Wire Color	Circuit No.	Function
A	D-GN/RD	168	Power Window Master Switch Left Rear Up Signal
B	GY	8	Instrument Panel Lamp Supply Voltage

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

C	PU	169	Power Window Master Switch Left Rear Down Signal
D	D-BU/PK	1307	Power Window Master Switch Lockout Signal
E	D-BU	668	Power Window Motor Left Rear Up Control
F	BK	750	Ground
G	RD/WH	140	Battery Positive Voltage
H	BN	669	Power Window Motor Left Rear Down Control

DIAGNOSTIC INFORMATION AND PROCEDURES**DIAGNOSTIC CODE INDEX****DIAGNOSTIC CODE INDEX**

DTC	Description
<u>DTC B1023</u>	** DESCRIPTION NOT COLLECTED **
<u>DTC B1544, B1600 or B1605</u>	** MULTIPLE VALUES **
<u>DTC B1580 or B1590</u>	** MULTIPLE VALUES **
<u>DTC B1640 or B1645</u>	** MULTIPLE VALUES **
<u>DTC B3205</u>	**DESCRIPTION NOT COLLECTED **
<u>DTC B3225</u>	Left Front/Driver Window Motor Circuit

DIAGNOSTIC STARTING POINT - DOORS

Begin the system diagnosis with **Diagnostic System Check - Vehicle** in Vehicle DTC Information. The Diagnostic System Check will provide the following information:

- The identification of the control modules which command the system
- The ability of the control modules to communicate through the Serial Data circuit
- The identification of any stored diagnostic trouble codes (DTCs) and their status

The use of the Diagnostic System Check will identify the correct procedure for diagnosing the system and where the procedure is located.

SCAN TOOL OUTPUT CONTROLS**Scan Tool Output Controls**

Scan Tool	Additional Menu	
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2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

Output Control	Selection(s)	Description
Lock All Doors	Door Lock Test	The BCM momentarily pulses all of the door lock motors. All doors should lock when ON is selected.
Driver Door Unlock	Door Lock Test	The BCM momentarily pulses only the driver door lock motor. The driver door should unlock when ON is selected.
Passenger Door Unlock	Door Lock Test	The BCM momentarily pulses all of the passenger door lock motors. All passenger doors should unlock when ON is selected.

SCAN TOOL DATA LIST

Body Control Module (BCM)

Scan Tool Parameter	Data List	Units Displayed	Typical Data Value
Operating Conditions: Battery power is the only requirement for Data, Inputs, Module Information and Lock Outputs.			
Base Model Part Number	Module Information 1	Number	varies
All Door Lock Motors	Outputs	OFF/ON	OFF
Battery Voltage	Data	9.0 -16.0 Volts	12.8 Volts
Driver Door Unlock Motors	Outputs	OFF/ON	OFF
Left Rear Door Ajar Sw.	Inputs	Closed/Ajar	Closed
LF Door Ajar Switch	Inputs	Door Closed/Ajar	Door Closed
LF Door Lock Switch	Inputs	Idle/Lock/Unlock/Invalid	Idle
LF Door Open Switch	Inputs	Closed/Open	Closed
LF Key Cylinder Lock Switch	Inputs	Idle/Lock/Unlock/Invalid	Idle
LR Door Open Switch	Inputs	Closed/Open	Closed
Passenger Door Unlock Motors	Outputs	OFF/ON	OFF
RF Door Ajar Switch	Inputs	Door Closed/Ajar	Door Closed
RF Door Lock Switch	Inputs	Idle/Lock/Unlock/Invalid	Idle
RF Door Open Switch	Inputs	Closed/Open	Closed
RF Key Cylinder Lock Switch	Inputs	Idle/Lock/Unlock/Invalid	Idle
Right Rear Door Ajar	Inputs	Closed/Ajar	Closed

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

Sw.			
RR Door Open Sw.	Inputs	Closed/Open	Closed

SCAN TOOL DATA DEFINITIONS

Base Model Part Number

The scan tool displays the part number of the module.

All Door Lock Motors

The scan tool displays OFF/ON. This is the Lock output from the body control module (BCM) to all door lock actuators. When either door lock switch is operated to the Lock position the parameter is displayed as ON.

Battery Voltage

The scan tool displays 9.0-16.0 volts. This is the state of charge of the vehicles battery.

Driver Door Unlock Motor

The scan tool displays OFF/ON. This is the Unlock output from the body control module (BCM) to the driver door lock actuator. When either door lock switch is operated to the Unlock position the parameter is displayed as ON.

Left Rear Door Ajar Sw.

The scan tool displays Closed/Ajar, the left rear door ajar switch input to the body control module (BCM), where an open door is displayed as Ajar.

LF Door Ajar Switch

The scan tool displays Door Closed/Ajar, the driver door ajar switch input to the body control module (BCM), where an open door is displayed as Ajar.

LF Door Lock Switch

The scan tool displays Idle/Lock/Unlock/Invalid. This is the driver door lock switch input to the body control module (BCM). Switch transitions to the lock and unlock positions are displayed as Lock and Unlock. If the switch is stuck or if the switch circuit has shorted to ground, the scan tool will display that function as active. If the switch is then activated to the opposite function, the scan tool displays Invalid.

LF Door Open Switch

The scan tool displays Closed/Open, the driver door open switch input to the body control module (BCM), where an open door is displayed as Open.

LF Key Cylinder Lock Switch

The scan tool displays Idle/Lock/Unlock/Invalid, the driver door key cylinder switch input to the body control module (BCM), where the switch transitions to the lock and unlock positions are displayed as Lock and Unlock. If the switch is stuck or if the switch circuit has shorted to ground, the scan tool will display that function as active. If the switch is then activated to the opposite function, the scan tool displays Invalid.

LR Door Open Switch

The scan tool displays Closed/Open, the left rear door open switch input to the body control module (BCM), where an open door is displayed as Open.

Passenger Door Unlock Motors

The scan tool displays OFF/ON. This is the Unlock output from the body control module (BCM) to all passenger door lock actuators. When either door lock switch is operated to the Unlock position the parameter is displayed as ON.

RF Door Ajar Switch

The scan tool displays Door Closed/Ajar, the front passenger door ajar switch input to the body control module (BCM), where an open door is displayed as Ajar.

RF Door Lock Switch

The scan tool displays Idle/Lock/Unlock/Invalid. This is the front passenger door lock switch input to the body control module (BCM). Switch transitions to the lock and unlock positions are displayed as Lock and Unlock. If the switch is stuck or if the switch circuit has shorted to ground, the scan tool will display that function as active. If the switch is then activated to the opposite function, the scan tool displays Invalid.

RF Door Open Sw.

The scan tool displays Closed/Open, the front passenger door open switch input to the body control module (BCM), where an open door is displayed as Open.

RF Key Cylinder Lock Switch

If the vehicle is equipped with this feature, the scan tool displays Idle/Lock/Unlock/Invalid, the front passenger door key cylinder switch input to the body control module (BCM), where the switch transitions to the lock and unlock positions are

displayed as Lock and Unlock. If the switch is stuck or if the switch circuit has shorted to ground, the scan tool will display that function as active. If the switch is then activated to the opposite function, the scan tool displays Invalid.

Right Rear Door Ajar Sw.

The scan tool displays Closed/Ajar, the right rear door ajar switch input to the body control module (BCM), where an open door is displayed as Ajar.

RR Door Open Switch

The scan tool displays Closed/Open, the right rear door open switch input to the body control module (BCM), where an open door is displayed as Open.

DTC B1023

DTC Descriptor

DTC B1023 00

Integral Switch Performance No Additional Information

Diagnostic Fault Information

Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.

Circuit/System Description

The switch that failed and generated this DTC is part of the driver door module (DDM) or front passenger door module (PDM). When a switch is activated, the DDM or PDM actuates the appropriate component or sends a message over GMLAN serial data link to the appropriate door control module to actuate the appropriate component.

Conditions for Running the DTC

Battery voltage must be between 9-16 volts.

Conditions for Setting the DTC

The DDM or PDM receives multiple inputs from a single switch at the same time for more than 160 milliseconds. The following driver or front passenger switches will set DTC B1023:

- Door lock switch
- Window switch
- Window lockout switch
- Mirror select switch

Action Taken When the DTC Sets

The DDM/PDM ignores inputs from the malfunctioning switch and disables any functions the switch controls.

Conditions for Clearing the DTC

- The condition responsible for setting the DTC no longer exists.
- You issue a scan tool CLEAR DTCs command.
- A history DTC will clear once 50 consecutive malfunction-free ignition cycles have occurred.

Reference Information**Schematic Reference**

- **Power Window Schematics**
- **Door Lock/Indicator Schematics**
- **Outside Rearview Mirror Schematics**
- **Door Control Module Schematics**

Connector End View Reference**Power Door Systems Connector End Views****Electrical Information Reference**

- **Circuit Testing**
- **Connector Repairs**
- **Testing for Intermittent Conditions and Poor Connections**
- **Wiring Repairs**

Scan Tool Reference

- **Scan Tool Output Controls**
- **Scan Tool Data List**
- **Scan Tool Data Definitions**

Circuit/System Testing

Ignition ON, install a scan tool, clear all DTCs and operate the appropriate door switches within the Conditions for Running the DTC.

- If DTC B1023 resets as current, replace the appropriate door control module.

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

Repair Procedures

Perform the **Diagnostic Repair Verification** after completing the diagnostic procedure.

Control Module References for DDM or PDM replacement, setup and programming.

DTC B1544, B1600 OR B1605

DTC Descriptor

DTC B1544 01

Mirror Motors Common Circuit Short to Voltage

DTC B1544 02

Mirror Motors Common Circuit Short to Ground

DTC B1544 04

Mirror Motors Common Circuit Open Circuit

DTC B1600 01

Mirror Motor 1 (vertical) Circuit Short to Voltage

DTC B1600 02

Mirror Motor 1 (vertical) Circuit Short to Ground

DTC B1600 04

Mirror Motor 1 (vertical) Circuit Open Circuit

DTC B1605 01

Mirror Motor 2 (horizontal) Circuit Short to Voltage

DTC B1605 02

Mirror Motor 2 (horizontal) Circuit Short to Ground

DTC B1605 04

Mirror Motor 2 (horizontal) Circuit Open Circuit

Diagnostic Fault Information

Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.

Circuit/System Description

The driver door module (DDM) and passenger door module (PDM) each provide motor control output functions for their respective mirrors. These output controls allow each door module to command their respective power mirrors in horizontal and vertical positions. When the door modules detect an active mirror command from the outside rearview mirror switch, they will command the respective mirror motor in the appropriate direction. Each door module commands their respective mirror motors by applying a ground or voltage to the control circuit, depending on the desired mirror position. For more detailed information concerning power mirror operation refer to **Outside Mirror Description and Operation**.

Conditions for Running the DTC

Battery voltage must be between 9-16 volts.

Conditions for Setting the DTC

- DTC B1544 01 will set when the DDM or PDM detects a short to voltage in the mirror motor common circuit.
- DTC B1544 02 will set when the DDM or PDM detects a short to ground in the mirror motor common circuit.
- DTC B1544 04 will set when the DDM or PDM detects an open in the mirror motor common circuit.
- DTC B1600 01 will set when the DDM or PDM detects a short to voltage in the mirror motor control circuit.
- DTC B1600 02 will set when the DDM or PDM detects a short to ground in the mirror motor control circuit.
- DTC B1600 04 will set when the DDM or PDM detects an open in the mirror motor control circuit.
- DTC B1605 01 will set when the DDM or PDM detects a short to voltage in the mirror motor control circuit.
- DTC B1605 02 will set when the DDM or PDM detects a short to ground in the mirror motor control circuit.
- DTC B1605 04 will set when the DDM or PDM detects an open in the mirror motor control circuit.

Actions Taken When the DTC Sets

- When DTC B1544 is present, all mirror controls will be disabled.

- When DTC B1600 is present, the vertical mirror control will be disabled.
- When DTC B1605 is present, the horizontal mirror control will be disabled.

Conditions for Clearing the DTC

- The condition responsible for setting the DTC no longer exists.
- You issue a scan tool CLEAR DTCs command.
- A history DTC will clear once 50 consecutive malfunction-free ignition cycles have occurred.

Diagnostic Aids

The following conditions may cause an intermittent malfunction:

- There is an intermittent short to ground or voltage in a mirror motor control circuit.
- A mirror motor is shorted internally.

Reference Information**Schematic Reference****Outside Rearview Mirror Schematics****Connector End View Reference****Power Door Systems Connector End Views****Electrical Information Reference**

- **Circuit Testing**
- **Connector Repairs**
- **Testing for Intermittent Conditions and Poor Connections**
- **Wiring Repairs**

Scan Tool Reference

- **Scan Tool Output Controls**
- **Scan Tool Data List**
- **Scan Tool Data Definitions**

Circuit/System Testing

1. Ignition OFF, disconnect the appropriate outside rearview mirror C1 harness connector.
2. Ignition OFF, test for less than 1.0 ohm of resistance at each mirror motor control circuit

between the outside rearview mirror C1 harness connector and ground.

- If greater than the specified range, test the appropriate mirror motor control circuit for a short to voltage or an open/high resistance. If the circuit tests normal, replace the appropriate door control module.
- 3. Connect a test lamp between mirror motor UP control circuit terminal 10 and mirror motor DOWN control circuit terminal 9.
- 4. Command the appropriate mirror to the UP and DOWN positions with a scan tool. The test lamp should turn ON when commanding the Up and DOWN states.
 - If the test lamp remains OFF during either of the commands, test for a short to ground on either control circuit. If the circuit tests normal, replace the appropriate door control module.
- 5. Connect a test lamp between mirror motor LEFT control circuit terminal 11 and mirror motor RIGHT control circuit terminal 10.
- 6. Command the appropriate mirror to the LEFT and RIGHT positions with a scan tool. The test lamp should turn ON when commanding the LEFT and RIGHT states.
 - If the test lamp remains OFF during either of the commands, test for a short to ground on either control circuit. If the circuit tests normal, replace the appropriate door control module.
- 7. If all circuits test normal, test or replace the appropriate mirror.

Repair Procedures

Perform the **Diagnostic Repair Verification** after completing the diagnostic procedure.

- **Power Mirror Replacement.**
- **Control Module References** for DDM or PDM replacement, setup and programming.

DTC B1580 OR B1590

DTC Descriptor

DTC B1580

Mirror Horizontal Position Sensor Circuit

DTC B1590

Mirror Vertical Position Sensor Circuit

Diagnostic Fault Information

Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.

Circuit/System Description

The driver door module (DDM) and passenger door module (PDM) receive mirror position signals from the mirror horizontal and vertical position sensors. These signals are used by the door modules for memory recall functions of the driver and passenger mirrors. The door modules command the mirror memory settings based upon the voltage level received back from the position sensors. Each door module provides a 5 volt supply, a signal and ground circuit for each of the position sensors. The horizontal and vertical position sensors are variable resistors that the door modules monitor voltage levels across. When a memory setting is recalled, the door modules command the mirror motors in the appropriate directions until the stored position sensor voltage levels are achieved. The DDM and PDM monitor the signal circuits to determine if the voltage level is out of range. For more detailed information concerning power mirror operation refer to **Outside Mirror Description and Operation**.

Conditions for Running the DTC

Battery voltage must be between 9-16 volts.

Conditions for Setting the DTC

These DTCs will set if:

- A mirror position sensor signal voltage is below 0.5 volts for 2 seconds.
- A mirror position sensor signal voltage is above 4.5 volts for 2 seconds.

Actions Taken When the DTC Sets

- The door module will ignore the failed position sensor.
- The door module will ignore memory set or recall for the mirrors.
- Manual mirror movements will be allowed.

Conditions for Clearing the DTC

- The condition responsible for setting the DTC no longer exists.
- You issue a scan tool CLEAR DTCs command.
- A history DTC will clear once 50 consecutive malfunction-free ignition cycles have occurred.

Diagnostic Aids

If DTC B1580 and B1590 are both set, the low reference circuit may be open or the 5-volt reference circuit may be open, shorted to ground or shorted to voltage.

Reference Information**Schematic Reference**

Outside Rearview Mirror Schematics

Connector End View Reference

Power Door Systems Connector End Views

Electrical Information Reference

- **Circuit Testing**
- **Connector Repairs**
- **Testing for Intermittent Conditions and Poor Connections**
- **Wiring Repairs**

Scan Tool Reference

- **Scan Tool Output Controls**
- **Scan Tool Data List**
- **Scan Tool Data Definitions**

Circuit/System Testing

1. Ignition OFF, disconnect the appropriate outside rearview mirror C2 harness connector.
2. Ignition OFF, test for less than 1.0 ohm of resistance between the low reference circuit terminal 7 and ground.
 - If greater than the specified range, test the low reference circuit for an open/high resistance. If the circuit tests normal, replace the appropriate door control module.
3. Ignition ON, test for 4.8-5.2 volts between the 5-volt reference circuit terminal 3 and ground.
 - If less than the specified range, test the 5-volt reference circuit for a short to ground or an open/high resistance. If the circuit tests normal, replace the appropriate door control module.
 - If greater than the specified range, test the 5-volt reference circuit for a short to voltage. If the circuit tests normal, replace the appropriate door control module.
4. Verify with a scan tool the appropriate mirror position parameter is less than 4.5 volts.
 - If greater than the specified range, test the appropriate mirror position signal circuit for a short to voltage. If the circuit tests normal, replace the appropriate door control module.
5. Install a 3-A fused jumper wire between the appropriate mirror position signal circuit and the 5-volt reference circuit terminal 3. Verify with a scan tool the appropriate mirror position parameter is greater than 4.5 volts.
 - If less than the specified range, test the appropriate mirror position signal circuit for short to ground or an open/high resistance. If the circuit tests normal, replace the

appropriate door control module.

6. If all circuits test normal, test or replace the appropriate mirror.

Repair Procedures

Perform the **Diagnostic Repair Verification** after completing the diagnostic procedure.

- **Power Mirror Replacement.**
- **Control Module References** for DDM or PDM replacement, setup and programming.

DTC B1640 OR B1645

DTC Descriptors

DTC B1640 01

Mirror Heater Circuit Short to Battery

DTC B1640 02

Mirror Heater Circuit Short to Ground

Diagnostic Fault Information

Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.

Circuit/System Description

The driver door module (DDM) and passenger door module (PDM) supply voltage to the outside rear view mirror heater elements upon receipt of a GMLAN message from the HVAC control module indicating that the rear defogger system has been activated. The door modules monitor the heater element control circuits whenever the ignition is on. For more detailed information concerning power mirror operation refer to **Outside Mirror Description and Operation.**

Conditions for Running the DTC

Battery voltage must be between 9-16 volts.

Conditions for Setting the DTC

- DTC B1640 01 will set when the DDM or PDM detects a short to voltage in the heater element control circuit.
- DTC B1640 02 will set when the DDM or PDM detects a short to ground in the heater element control circuit.

Action Taken When the DTC Sets

The DDM or PDM will not activate the affected heated mirror.

Conditions for Clearing the DTC

- The condition responsible for setting the DTC no longer exists.
- You issue a scan tool CLEAR DTCs command.
- A history DTC will clear once 50 consecutive malfunction-free ignition cycles have occurred.

Reference Information**Schematic Reference****Outside Rearview Mirror Schematics****Connector End View Reference****Power Door Systems Connector End Views****Electrical Information Reference**

- **Circuit Testing**
- **Connector Repairs**
- **Testing for Intermittent Conditions and Poor Connections**
- **Wiring Repairs**

Scan Tool Reference

- **Scan Tool Output Controls**
- **Scan Tool Data List**
- **Scan Tool Data Definitions**

Circuit/System Testing

1. Ignition OFF, disconnect the C1 harness connector at the appropriate outside rearview mirror.
2. Ignition OFF, test for less than 1.0 ohm of resistance between the low reference circuit terminal 3 and ground.
 - If greater than the specified range, test the low reference circuit for an open/high resistance. If the circuit tests normal, replace the appropriate door control module.
3. Connect a test lamp between control circuit terminal 4 and low reference circuit terminal 3.

4. Ignition ON, turn the rear defogger ON and OFF. The test lamp should turn ON and OFF as the rear defogger switch is cycled On and OFF.
 - If the test lamp remains OFF, test the supply voltage circuit for a short to ground or an open/high resistance. If the circuit tests normal, replace the appropriate door control module.
 - If test lamp remains ON, test the supply voltage circuit for a short to voltage. If the circuit tests normal, replace the appropriate door control module.
5. If all circuits test normal, test or replace the appropriate outside rearview mirror face.

Repair Procedures

Perform the **Diagnostic Repair Verification** after completing the diagnostic procedure.

- **Outside Rearview Mirror Glass Replacement**.
- **Control Module References** for DDM or PDM replacement, setup and programming.

DTC B3205**DTC Descriptors****DTC B3205 00**

Window Motor Circuit No Additional Information

DTC B3205 0B

Window Motor Circuit Current Above Threshold

Diagnostic Fault Information

Perform the **Diagnostic System Check - Vehicle** prior to using this diagnostic procedure.

Circuit/System Description

The driver door switch (DDS) and passenger door switch (PDS) control the power window functions through the power window motor up and down control circuits. The door switches monitor the control circuits for fault conditions when up or down operation is requested prior to activating the function and during operation. For more detailed information concerning power window operation refer to **Power Windows Description and Operation**.

Conditions for Running the DTC

Battery voltage must be between 9-16 volts.

Conditions for Setting the DTC

- DTC B3205 00 will set when the DDM or PDM detects current flow on a window motor control circuit prior to activating the output.
- DTC B3205 0B will set when the DDM or PDM detects excessive current flow on a window motor control circuit.

Action Taken When the DTC Sets

- When DTC B3205 00 is present, window motor operation will be disabled.
- When DTC B3205 0B is present, window motor operation will be disabled for the current ignition cycle.

Conditions for Clearing the DTC

- The condition responsible for setting the DTC no longer exists.
- You issue a scan tool CLEAR DTCs command.
- A history DTC will clear once 50 consecutive malfunction-free ignition cycles have occurred.

Diagnostic Aids

The following conditions may cause an intermittent malfunction:

- There is an intermittent sticking or binding window causing the window to be unable to move.
- A window motor is shorted internally.

Reference Information**Schematic Reference****Power Window Schematics****Connector End View Reference****Power Door Systems Connector End Views****Electrical Information Reference**

- **Circuit Testing**
- **Connector Repairs**
- **Testing for Intermittent Conditions and Poor Connections**
- **Wiring Repairs**

Scan Tool Reference

- **Scan Tool Output Controls**
- **Scan Tool Data List**
- **Scan Tool Data Definitions**

Circuit/System Testing

1. Ignition OFF, disconnect the harness connector at the appropriate window motor.
2. Ignition OFF, test for less than 1.0 ohm of resistance between the control circuit terminal A and ground.
 - If greater than the specified range, test the control circuit for a short to voltage or an open/high resistance. If circuits test normal, replace the appropriate door control module.
3. Ignition OFF, test for less than 1.0 ohm of resistance between the control circuit terminal B and ground.
 - If greater than the specified range, test the control circuit for a short to voltage or an open/high resistance. If circuits test normal, replace the appropriate door control module.
4. Connect a test lamp between control circuit terminal A and control circuit terminal B.
5. Command the appropriate window to the UP and DOWN positions with the power window switch. The test lamp should turn ON when commanding the UP and DOWN states.
 - If the test lamp remains OFF during either of the commands, test for a short to ground on either control circuit. If the circuits test normal, replace the appropriate door control module.
6. If all circuits test normal, test or replace the appropriate window motor.

Repair Procedures

Perform the **Diagnostic Repair Verification** after completing the diagnostic procedure.

- **Front Side Door Window Regulator Motor Replacement.**
- **Control Module References** for DDM or PDM replacement, setup and programming.

DTC B3225**Circuit Description**

The driver door module (DDM) and passenger door module (PDM) check for hall sensor pulses and relay feedback of their respective window motors at least once every 50 milliseconds. When the DDM or PDM detects no hall sensor pulses or relay feedback in the window motor, a DTC is set. For more detailed information concerning power window operation, refer to **Power Windows Description and Operation.**

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

DTC Descriptor

This diagnostic procedure supports the following DTC:

DTC B3225 Left Front/Driver Window Motor Circuit

Conditions for Running the DTC

Battery voltage must be between 9-16 volts.

Conditions for Setting the DTC

- The DDM or PDM detects no hall sensor pulses from the power window motor.
- The DDM or PDM detects no relay feedback from the power window motor.

Action Taken When the DTC Sets

Loss of normalization

Conditions for Clearing the DTC

- The condition responsible for setting the DTC no longer exists.
- You issue a scan tool CLEAR DTCs command.

Diagnostic Aids

The following conditions may cause an intermittent malfunction:

- There is an intermittent sticking or binding condition on a window causing the window to be unable to move.
- A window motor is shorted internally.
- Thoroughly inspect the wiring and connectors. An incomplete inspection of the wiring and connectors may result in misdiagnosis causing part replacement with the reappearance of the malfunction. If an intermittent malfunction exists, refer to **Testing for Intermittent Conditions and Poor Connections** .

DTC B3225

Step	Action	Yes	No
Schematic Reference: <u>Power Window Schematics</u> and <u>Door Control Module Schematics</u>			
Connector End View Reference: <u>Power Door Systems Connector End Views</u>			
1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

2	Inspect the appropriate window for a sticking or binding condition. Did you find and correct the condition?	Go to Step 5	Go to Step 3
3	Inspect for poor connections at the harness connector of the appropriate door module. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> . Did you find and correct the condition?	Go to Step 5	Go to Step 4
4	Replace the appropriate door module. Refer to <u>Control Module References</u> for replacement, setup and programming. Did you complete the replacement?	Go to Step 5	-
5	1. Use the scan tool in order to clear the DTCs. 2. Operate the vehicle within the Conditions for Running the DTC, as specified in the supporting text. Does the DTC reset?	Go to Step 2	System OK

SYMPTOMS - DOORS

IMPORTANT: The following steps must be completed before using the symptom tables.

1. Perform the **Diagnostic System Check - Vehicle** in Vehicle DTC Information before using the symptom tables in order to verify that all of the following are true:
 - There are no DTCs set.
 - The control modules can communicate via GMLAN serial data.
2. Review the system description and operation in order to familiarize yourself with the system functions. Refer to the following:
 - **Power Windows Description and Operation**
 - **Power Door Latch Description and Operation**
 - **Power Door Locks Description and Operation**
 - **Door Ajar Indicator Description and Operation**
 - **Outside Mirror Description and Operation**

Visual/Physical Inspection

- Inspect for aftermarket devices which could affect the operation of the power windows, power door locks or power mirrors. Refer to **Checking Aftermarket Accessories** in Wiring Systems.
- Inspect the easily accessible or visible system components for obvious damage or conditions which could cause the symptom.

Intermittent

Faulty electrical connections or wiring may be the cause of intermittent conditions. Refer to **Testing for Intermittent Conditions and Poor Connections** in Wiring Systems.

Symptom List

Refer to a symptom diagnostic procedure from the following list in order to diagnose the symptom:

- **Power Windows Inoperative - All**
- **Power Window Express Up Function Inoperative**
- **Power Window Lockout Function Inoperative**
- **Power Window Inoperative from Master Switch**
- **Power Window Inoperative - Passenger Door**
- **Door Ajar Indicator Malfunction**
- **Power Door Latch Inoperative - Driver Door**
- **Power Door Latch Inoperative - Passenger Door**
- **Power Door Locks Inoperative**
- **Power Door Lock Key Cylinder Switches Inoperative**
- **Power Door Locks Inoperative - Deadbolt**
- **Automatic Door Locks Inoperative**
- **Power Mirrors Inoperative**
- **Power Mirror Folding Inoperative**
- **Outside Mirrors Automatic Day-Night Feature Inoperative**
- **Power Mirror Mirror Tilt Inoperative in Reverse**
- **Heated Mirrors Inoperative - One**

POWER WINDOWS INOPERATIVE - ALL**Test Description**

The number below refers to the step number on the diagnostic table.

6: This step ensures that the power window master switch lockout signal circuit is not the cause of the malfunction. This circuit supplies battery positive voltage, through the rear window lockout switch, to the rear window switches and is used to enable or disable the rear window lockout feature. When the rear window lockout feature is enabled, the circuit is open and no voltage is supplied to the rear window switches. When the feature is not enabled, the circuit is connected to battery positive voltage. If this circuit is shorted to ground when the lockout feature is not enabled, the PWR WDO circuit breaker may cycle continuously OFF/ON until, either the lockout switch is pressed to open the circuit or the circuit breaker is permanently damaged. All windows may be partially or totally inoperative while the fault is present.

Power Windows Inoperative - All

Step	Action	Yes	No
Schematic Reference: <u>Power Window Schematics</u>			
Connector End View Reference: <u>Power Door Systems Connector End Views</u>			
1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	Are all the power windows inoperative?	Go to Step 3	Go to <u>Testing for Intermittent Conditions and Poor Connections</u>
3	<ol style="list-style-type: none"> 1. Disconnect the driver window switch C2 harness connector. 2. Turn ON the ignition, with the engine OFF. 3. Probe the power window switch voltage supply circuit of the harness connector with a test lamp that is connected to ground. 		
	Does the test lamp illuminate?	Go to Step 4	Go to Step 5
4	Connect the test lamp between the power window switch voltage supply circuit and the ground circuit of the harness connector. Does the test lamp illuminate?	Go to Step 6	Go to Step 8
	Test for an open or a short to ground in		

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

5	the power window switch voltage supply circuits of the driver window and front passenger window switches. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the condition?	Go to Step 11	Go to Step 10
6	Test the power window master switch lockout signal circuit for a short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the condition?	Go to Step 11	Go to Step 7
7	Inspect for poor connections at the harness connector of the driver window switch. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> . Did you find and correct the condition?	Go to Step 11	Go to Step 9
8	Repair the open in the ground circuit. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you complete the repair?	Go to Step 11	-
9	Replace the driver window switch. Refer to <u>Door Lock and Side Window Switch Replacement - Driver Side</u> Did you complete the replacement?	Go to Step 11	-
10	Replace the PWR WDO circuit breaker. Refer to <u>Relay Replacement (Within an Electrical Center)</u> or <u>Relay Replacement (Attached to Wire Harness)</u> . Did you complete the repair?	Go to Step 11	-
11	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 2

POWER WINDOW EXPRESS UP FUNCTION INOPERATIVE

Power Window Express Up Function Inoperative

Step	Action	Yes	No
Schematic Reference: <u>Power Window Schematics</u> Connector End View Reference: <u>Power Door Systems Connector End Views</u> DEFINITION: This diagnostic is used when only the Express Up function of a power window is inoperative. This test assumes that all DTCs have been diagnosed.			

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	Verify that the Power Windows Inoperative - Express Up Function complaint is present. Does the power windows express up system operate as described in the Description and Operation?	Go to <u>Testing for Intermittent Conditions and Poor Connections</u>	Go to Step 3
3	<ol style="list-style-type: none"> 1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. With the scan tool, observe the appropriate Driver LF, LR, RF or RR Window Switch parameters in the driver door switch assembly (DDSA) data list. 4. Using the appropriate window switch on the DDSA, attempt to operate the inoperative window to the express up position. <p>Did the parameter change from the Idle state to the Express Up state?</p>	Go to Step 4	Go to Step 8
4	<ol style="list-style-type: none"> 1. With the scan tool, select the door control module associated with the inoperative window. 2. Observe the Window Switch parameter of the inoperative window. 3. Operate the passenger door window switch of the inoperative window to the Express Up position. <p>Did the parameter change from the Idle state to the Express Up state?</p>	Go to Step 9	Go to Step 5
	<ol style="list-style-type: none"> 1. Turn OFF the ignition. 2. Disconnect the harness connector 		

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

5	<p>of the window switch associated with the inoperative window.</p> <ol style="list-style-type: none"> 3. Connect a 3-amp fused jumper wire between the power window switch up signal circuit and the power window switch ground circuit at the harness connector. 4. Connect an additional 3-amp fused jumper wire between the power window switch express signal circuit and the power window ground circuit at the harness connector. 5. Turn ON the ignition, with the engine OFF. <p>Does the Window Switch parameter change from the Idle state to the Express Up state?</p>	Go to Step 10	Go to Step 6
6	<p>Test the power window switch express signal circuit of the inoperative window for an open, high resistance or short to battery voltage. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> .</p> <p>Did you find and correct the condition?</p>	Go to Step 15	Go to Step 7
7	<p>Inspect for poor connections at the harness connector of the inoperative door control module. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> .</p> <p>Did you find and correct the condition?</p>	Go to Step 15	Go to Step 11
8	<p>Inspect for poor connections at the harness connector of the DDSA. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> .</p> <p>Did you find and correct the condition?</p>	Go to Step 15	Go to Step 12
	<p>Inspect for poor connections at the harness connector of the inoperative window sensor/motor assembly. Refer</p>		

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

9	to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> . Did you find and correct the condition?	Go to Step 15	Go to Step 13
10	Inspect for poor connections at the harness connector of the inoperative power window switch. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> . Did you find and correct the condition?	Go to Step 15	Go to Step 14
11	IMPORTANT: Test the battery positive voltage circuit of the appropriate window sensor/motor for a short to ground before replacing the door module. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Replace the appropriate door control module. Refer to <u>Control Module References</u> for replacement, setup and programming. Did you complete the replacement?	Go to Step 15	-
12	Replace the DDSA. Refer to <u>Door Lock and Side Window Switch Replacement - Driver Side</u> . Did you complete the replacement?	Go to Step 15	-
13	Replace the inoperative window sensor/motor assembly. Refer to <u>Front Side Door Window Regulator Replacement</u> or <u>Rear Side Door Window Regulator Replacement</u> . Did you complete the replacement?	Go to Step 15	-
14	Replace the inoperative power window switch. Refer to <u>Rear Side Door Window Switch Replacement</u> . Did you complete the replacement?	Go to Step 15	-
15	1. Re-initialize the window sensor/motor. <u>Door Control Module Programming and Setup</u> 2. Operate the system in order to		

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

verify the repair.

Did you correct the condition?

System OK

Go to **Step 2****POWER WINDOW LOCKOUT FUNCTION INOPERATIVE****Test Description**

The number below refers to the step number on the diagnostic table.

3: This step determines if the power window master switch lockout signal circuit may be shorted to battery positive voltage. Normally, with rear window lockout not enabled, this circuit is closed within the master window switch and rear windows are operational from their respective switches. When the lockout feature is enabled, the circuit is open and no voltage is available at the rear window switches. A short to battery positive voltage on this circuit would cause power to be supplied to the rear window switches regardless of the lockout switch status.

Power Window Lockout Function Inoperative

Step	Action	Yes	No
Schematic Reference: <u>Power Window Schematics</u>			
Connector End View Reference: <u>Power Door Systems Connector End Views</u>			
1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	Verify that the inoperative power windows lockout function fault is present. Does the power windows lockout function operate normally?	Go to <u>Testing for Intermittent Conditions and Poor Connections</u>	Go to Step 3
3	1. Disconnect the driver window switch. 2. Turn ON the ignition, with the engine OFF. 3. Probe the power window master switch lockout signal circuit of the driver window switch with a test lamp that is connected to ground. Does the test lamp illuminate?	Go to Step 5	Go to Step 4
	Inspect for poor connections at the harness		

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

4	connector of the driver window switch. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> . Did you find and correct the condition?	Go to Step 7	Go to Step 6
5	Repair the short to battery positive voltage in the power window master switch lockout signal circuit. Refer to <u>Wiring Repairs</u> . Did you find and correct the condition?	Go to Step 7	-
6	Replace the driver window switch. Refer to <u>Door Lock and Side Window Switch Replacement - Driver Side</u> Did you complete the replacement?	Go to Step 7	-
7	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 2

POWER WINDOW INOPERATIVE FROM MASTER SWITCH

Power Window Inoperative from Master Switch

Step	Action	Yes	No
Schematic References: <u>Power Window Schematics</u> and <u>Door Control Module Schematics</u> Connector End View Reference: <u>Power Door Systems Connector End Views</u> DEFINITION: This diagnostic is used to diagnose either, an inoperative driver door power window, or, a passenger door power window that is inoperative only from the driver door switch assemble (DDSA). If the inoperative window is inoperative in only the Express Up mode, refer to <u>Power Window Express Up Function Inoperative</u> . This test assumes that all DTCs have been diagnosed.			
1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	Verify that the Power Window Inoperative from Master Switch complaint is present. Does the power window system operate from the driver door switch assembly (DDSA) as described in the Description and Operation?	Go to <u>Testing for Intermittent Conditions and Poor Connections</u>	Go to Step 3

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

3	<ol style="list-style-type: none"> 1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. With the scan tool, observe the Driver LF Window Switch, Driver RF Window Switch, Driver LR Window Switch and Driver RR Window Switch parameters in the DDSA data list. 4. Operate each power window switch located on the DDSA. <p>Did the parameters change from the Idle state to the Up, Down, Express Up and Express Down states?</p>	Go to Step 4	Go to Step 11
4	<p>Is the inoperative window the driver door window?</p>	Go to Step 5	Go to <u>Power Window Inoperative - Passenger Door</u>
5	<ol style="list-style-type: none"> 1. Turn OFF the ignition. 2. Disconnect the C 1 harness connector at the driver door module (DDM). 3. Turn ON the ignition, with the engine OFF. 4. Connect a test lamp between the battery positive voltage circuit and the ground circuit at the harness connector. <p>Does the test lamp illuminate?</p>	Go to Step 6	Go to Step 10
6	<ol style="list-style-type: none"> 1. Connect the C 1 harness connector at the DDM. 2. Disconnect the driver door power window motor harness connector. 3. Connect a test lamp between the power window motor left front up control circuit at the harness connector and ground. 		

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

	<p>4. Operate the DDSA LF Window Switch to the UP position.</p> <p>Does the test lamp illuminate?</p>	Go to Step 7	Go to Step 8
7	<p>1. Connect a test lamp between the power window motor left front down control circuit at the harness connector and ground.</p> <p>2. Operate the DDSA LF Window Switch to the DOWN position.</p> <p>Does the test lamp illuminate?</p>	Go to Step 12	Go to Step 9
8	<p>Test the power window motor left front up control circuit for an open, high resistance or short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> .</p> <p>Did you find and correct the condition?</p>	Go to Step 18	Go to Step 13
9	<p>Test the power window motor left front down control circuit for an open, high resistance or short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> .</p> <p>Did you find and correct the condition?</p>	Go to Step 18	Go to Step 13
10	<p>Test the battery positive voltage circuit for an open or high resistance. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> .</p> <p>Did you find and correct the condition?</p>	Go to Step 18	Go to Step 14
11	<p>Inspect for poor connections at the harness connector of the DDSA. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> .</p> <p>Did you find and correct the condition?</p>	Go to Step 18	Go to Step 15
12	<p>Inspect for poor connections at the harness connector of the LF power window motor. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> .</p> <p>Did you find and correct the condition?</p>	Go to Step 18	Go to Step 16
13	<p>Inspect for poor connections at the harness connector of the DDM. Refer to <u>Testing for Intermittent Conditions</u></p>		

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

	<u>and Poor Connections</u> and <u>Connector Repairs</u> . Did you find and correct the condition?	Go to Step 18	Go to Step 17
14	Locate and repair an open or high resistance in the ground circuit. Refer to <u>Wiring Repairs</u> . Did you complete the repair?	Go to Step 18	-
15	Replace the DDSA. Refer to <u>Door Lock and Side Window Switch Replacement - Driver Side</u> Did you complete the replacement?	Go to Step 18	-
16	Replace the LF window sensor/motor assembly. Refer to <u>Front Side Door Window Regulator Replacement</u> . Did you complete the replacement?	Go to Step 18	-
17	Replace the DDM. Refer to <u>Control Module References</u> for replacement, setup and programming. Did you complete the replacement?	Go to Step 18	-
18	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 2

POWER WINDOW INOPERATIVE - PASSENGER DOOR

Power Window Inoperative - Passenger Door

Step	Action	Yes	No
Schematic Reference: <u>Power Window Schematics</u> Connector End View Reference: <u>Power Door Systems Connector End Views</u>			
1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	Verify that the inoperative passenger door power window fault is present. Do all the passenger door power windows operate normally?	Go to <u>Testing for Intermittent Conditions and Poor Connections</u>	Go to Step 6
3	Is this vehicle a Lucerne?	Go to Step 4	Go to Step 6
4	Are all of the passenger windows		

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

	inoperative?	Go to Step 5	Go to Step 7
5	Test for an open in the window lockout switch circuit of the driver window switch. Refer to Circuit Testing and Wiring Repairs . Did you find and correct the condition?	Go to Step 20	Go to Step 18
6	<ol style="list-style-type: none"> 1. Disconnect the inoperative passenger window switch. 2. Turn ON the ignition, with the engine OFF. 3. Probe the power window master switch lockout signal circuit of the inoperative passenger window switch with a test lamp that is connected to ground. Does the test lamp illuminate?	Go to Step 8	Go to Step 10
7	<ol style="list-style-type: none"> 1. Disconnect the passenger window switch. 2. Turn the ignition to the ON position. 3. Using a test lamp connected to ground, probe the accessory voltage supply circuit. Does the test lamp illuminate?	Go to Step 8	Go to Step 16
8	<ol style="list-style-type: none"> 1. Using a test lamp, probe between the master window switch up circuit and the master window switch down circuit. 2. Activate the driver window switch to the UP and DOWN positions. Does the test lamp illuminate?	Go to Step 9	Go to Step 11
	<ol style="list-style-type: none"> 1. Connect the inoperative passenger window switch. 2. Disconnect the inoperative passenger window motor. 3. Connect a test lamp between the power window motor up control 		

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

9	<p>circuit and the power window motor down control circuit.</p> <p>4. Activate the inoperative passenger window switch to the UP and DOWN positions.</p> <p>Does the test lamp illuminate?</p>	Go to Step 13	Go to Step 12
10	<p>Test the power window master switch lockout signal circuit of the inoperative passenger window switch for an open. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> .</p> <p>Did you find and correct the condition?</p>	Go to Step 20	Go to Step 14
11	<p>Test the power window master switch signal circuits of the inoperative passenger window switch for a short to battery positive voltage or an open. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> .</p> <p>Did you find and correct the condition?</p>	Go to Step 20	Go to Step 14
12	<p>Test the power window motor circuits of the inoperative passenger window motor for a short to battery positive voltage or an open. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> .</p> <p>Did you find and correct the condition?</p>	Go to Step 20	Go to Step 15
13	<p>Inspect for poor connections at the inoperative passenger window motor. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> .</p> <p>Did you find and correct the condition?</p>	Go to Step 20	Go to Step 17
14	<p>Inspect for poor connections at the driver window switch. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> .</p> <p>Did you find and correct the condition?</p>	Go to Step 20	Go to Step 18
15	<p>Inspect for poor connections at the inoperative passenger window switch. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u></p>		

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

	and Connector Repairs . Did you find and correct the condition?	Go to Step 20	Go to Step 19
16	Repair a poor connection or an open in the accessory voltage supply circuit. Refer to Circuit Testing and Wiring Repairs . Did you complete the repair?	Go to Step 20	-
17	Replace the inoperative passenger window motor. Refer to Front Side Door Window Regulator Replacement or Rear Side Door Window Regulator Replacement . Did you complete the replacement?	Go to Step 20	-
18	Replace the driver window switch. Refer to Door Lock and Side Window Switch Replacement - Driver Side . Did you complete the replacement?	Go to Step 20	-
19	Replace the inoperative passenger window switch. Refer to Door Lock and Side Window Switch Replacement - Passenger Side . Did you complete the replacement?	Go to Step 20	-
20	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 2

DOOR AJAR INDICATOR MALFUNCTION

Door Ajar Indicator Malfunction

Step	Action	Yes	No
Schematic Reference: <u>Door Lock/Indicator Schematics</u> Connector End View Reference: <u>Power Door Systems Connector End Views</u> DEFINITION: One of the door ajar messages does not display Ajar when the corresponding door is ajar, or, one of the door ajar messages displays Ajar when the corresponding door is closed.			
1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to Diagnostic System Check - Vehicle
	Verify that the Door Ajar Indicator Malfunction complaint is present.	Go to Testing for	

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

2	Does the Door Ajar Indicator System operate as described in the system description and operation?	<u>Intermittent Conditions and Poor Connections</u>	Go to Step 3
3	<ol style="list-style-type: none"> 1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. Close all doors. 4. With a scan tool, navigate to the input list by selecting: <ul style="list-style-type: none"> • Lighting Systems • Data display • Body control module (BCM) • Input list <p style="text-align: center;">Observe the parameter of each door ajar switch:</p> <ul style="list-style-type: none"> • Left front (LF) Door Ajar Switch • Right front (RF) Door Ajar Switch • Left rear (LR) Door Ajar Sw. • Right rear (RR) Door Ajar Sw. <p>Does the scan tool indicate that the Door Ajar Switch parameter is in the Door Closed state for all doors?</p>	Go to Step 4	Go to Step 5
4	<ol style="list-style-type: none"> 1. Open all of the vehicle doors. 2. With the scan tool, observe the parameter of each door ajar switch in the Data Display, Inputs list of the BCM: <ul style="list-style-type: none"> • LF Door Ajar Switch • RF Door Ajar Switch • LR Door Ajar Sw. • RR Door Ajar Sw. <p>Does the scan tool indicate that the Door Ajar Switch is in the Door Open state for all doors?</p>	Go to <u>Testing for Intermittent Conditions and Poor Connections</u>	Go to Step 6

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

5	<ol style="list-style-type: none"> 1. Turn OFF the ignition. 2. Disconnect the harness connector of the malfunctioning door lock. 3. Turn ON the ignition, with the engine OFF. 4. With the scan tool, observe the inoperative Door Ajar Switch parameter. 	Go to Step 11	Go to Step 9
6	<ol style="list-style-type: none"> 1. Turn OFF the ignition. 2. Disconnect the harness connector of the malfunctioning door lock. 3. Connect a 3-amp fused jumper wire between the door ajar switch signal circuit of the harness connector and ground. 4. Turn ON the ignition, with the engine OFF. 5. With the scan tool, observe the appropriate Door Ajar Switch parameter. 	Go to Step 7	Go to Step 8
7	<ol style="list-style-type: none"> 1. Turn OFF the ignition. 2. Connect the 3-amp fused jumper wire between the door ajar switch signal circuit and the ground circuit of the harness connector. 3. Turn ON the ignition, with the engine OFF. 4. With the scan tool, observe the appropriate Door Ajar Switch parameter. 	Go to Step 11	Go to Step 12
8	<p>Test the door ajar switch signal circuit of the door lock for an open or a short to battery positive voltage. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> .</p>		

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

	Did you find and correct the condition?	Go to Step 15	Go to Step 10
9	Test the door ajar switch signal circuit of the door lock for a short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the condition?	Go to Step 15	Go to Step 10
10	Inspect for poor connections at the harness connector of the suspect BCM. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and to <u>Connector Repairs</u> . Did you find and correct the condition?	Go to Step 15	Go to Step 13
11	Inspect for poor connections at the harness connector of the malfunctioning door lock. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> . Did you find and correct the condition?	Go to Step 15	Go to Step 14
12	Repair the high resistance or open in the ground circuit of the door lock. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you complete the repair?	Go to Step 15	-
13	Replace the BCM. Refer to <u>Control Module References</u> for replacement, setup and programming. Did you complete the replacement?	Go to Step 15	-
14	Replace the door lock. Refer to <u>Front Side Door Lock Replacement</u> or <u>Rear Side Door Lock Replacement</u> . Did you complete the replacement?	Go to Step 15	-
15	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 2

POWER DOOR LATCH INOPERATIVE - DRIVER DOOR

Power Door Latch Inoperative - Driver Door

Step	Action	Yes	No
Schematic Reference: <u>Door Lock/Indicator Schematics</u> and <u>Door Control Module Schematics</u>			
Connector End View Reference: <u>Power Door Systems Connector End Views</u>			

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	<ol style="list-style-type: none"> 1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. With a scan tool, observe the driver door handle parameter in the driver door module (DDM) data list. 4. Activate the driver exterior door handle. <p>Does the scan tool display Inactive?</p>	Go to Step 7	Go to Step 3
3	<ol style="list-style-type: none"> 1. With a scan tool, observe the ext. driver door handle switch parameter in the remote control door lock receiver (RCDLR) miscellaneous inputs list. 2. Activate the driver exterior door handle. <p>Does the scan tool display Inactive?</p>	Go to Step 8	Go to Step 4
4	<ol style="list-style-type: none"> 1. Turn OFF the ignition. 2. Disconnect the DDM C1 harness connector. 3. Connect a test lamp between the door handle switch signal circuit of the unlatch enable switch and battery voltage at the DDM C1 harness connector. <p>Does the test lamp illuminate?</p>	Go to Step 11	Go to Step 5
5	<p>Activate the driver exterior door handle and observe the test lamp.</p> <p>Does the test lamp illuminate as the driver exterior door handle is activated?</p>	Go to Step 6	Go to Step 12
	<ol style="list-style-type: none"> 1. Reconnect the DDM C1 harness connector. 		

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

6	<p>2. Disconnect the driver door latch assembly harness connector.</p> <p>3. Connect a test lamp between the door latch motor control circuit and the door unlatch motor control circuit at the driver door latch assembly harness connector.</p> <p>4. Turn ON the ignition, with the engine OFF.</p> <p>5. Activate the driver exterior door handle.</p> <p>Does the test lamp illuminate as the door handle is activated?</p>	Go to Step 14	Go to Step 9
7	<p>Test the left front door handle lift switch signal circuit of the DDM for an open or high resistance. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> .</p> <p>Did you find and correct the condition?</p>	Go to Step 22	Go to Step 13
8	<p>Test the left front door handle lift switch signal circuit of the RCDLR for an open or high resistance. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> .</p> <p>Did you find and correct the condition?</p>	Go to Step 22	Go to Step 15
9	<p>Test the door latch motor control circuit for an open, high resistance or short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> .</p> <p>Did you find and correct the condition?</p>	Go to Step 22	Go to Step 10
10	<p>Test the door unlatch motor control circuit for an open, high resistance or short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> .</p> <p>Did you find and correct the condition?</p>	Go to Step 22	Go to Step 16
11	<p>Test the door handle switch signal circuit of the unlatch enable switch for a short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> .</p> <p>Did you find and correct the condition?</p>	Go to Step 22	Go to Step 17
	<p>Test the door handle switch signal circuit of the unlatch enable switch for</p>		

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

12	an open or high resistance. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the condition?	Go to Step 22	Go to Step 13
13	Test the driver door handle switch ground circuit for an open or high resistance. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the condition?	Go to Step 22	Go to Step 17
14	Inspect for poor connections at the harness connector of the driver door latch assembly. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> . Did you find and correct the condition?	Go to Step 22	Go to Step 18
15	Inspect for poor connections at the harness connector of the RCDLR. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> . Did you find and correct the condition?	Go to Step 22	Go to Step 19
16	Inspect for poor connections at the harness connector of the DDM. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> . Did you find and correct the condition?	Go to Step 22	Go to Step 20
17	Inspect for poor connections at the harness connector of the driver exterior door handle switch. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> . Did you find and correct the condition?	Go to Step 22	Go to Step 21
18	Replace the driver door lock assembly. Refer to <u>Front Side Door Lock Replacement</u> . Did you complete the replacement?	Go to Step 22	-
19	Replace the RCDLR. Refer to <u>Control Module References</u> for replacement, setup and programming. Did you complete the replacement?	Go to Step 22	-

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

20	Replace the DDM. Refer to <u>Control Module References</u> for replacement, setup and programming. Did you complete the replacement?	Go to Step 22	-
21	Replace the driver exterior door handle switch. Refer to <u>Front Side Door Outside Handle Replacement</u> . Did you complete the replacement?	Go to Step 22	-
22	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 2

POWER DOOR LATCH INOPERATIVE - PASSENGER DOOR**Power Door Latch Inoperative - Passenger Door**

Step	Action	Yes	No
Schematic Reference: <u>Door Lock/Indicator Schematics</u> and <u>Door Control Module Schematics</u>			
Connector End View Reference: <u>Power Door Systems Connector End Views</u>			
1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	<ol style="list-style-type: none">1. Install a scan tool.2. Turn ON the ignition, with the engine OFF.3. With a scan tool, observe the passenger door handle parameter in the passenger door module (PDM) data list.4. Activate the front passenger exterior door handle. Does the scan tool display Inactive?	Go to Step 7	Go to Step 3
3	<ol style="list-style-type: none">1. With a scan tool, observe the ext. psgr. door handle switch parameter in the remote control door lock receiver (RCDLR) miscellaneous inputs list.2. Activate the front passenger exterior door handle.		

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

	Does the scan tool display Inactive?	Go to Step 8	Go to Step 4
4	<ol style="list-style-type: none"> 1. Turn OFF the ignition. 2. Disconnect the PDM C 1 harness connector. 3. Connect a test lamp between the door handle switch signal circuit of the unlatch enable switch and battery voltage at the PDM C 1 harness connector. 		
	Does the test lamp illuminate?	Go to Step 11	Go to Step 5
5	Activate the front passenger exterior door handle and observe the test lamp. Does the test lamp illuminate as the front passenger exterior door handle is activated?	Go to Step 6	Go to Step 12
6	<ol style="list-style-type: none"> 1. Reconnect the PDM C 1 harness connector. 2. Disconnect the front passenger door latch assembly harness connector. 3. Connect a test lamp between the door latch motor control circuit and the door unlatch motor control circuit at the passenger door latch assembly harness connector. 4. Turn ON the ignition, with the engine OFF. 5. Activate the front passenger exterior door handle. 		
	Does the test lamp illuminate as the door handle is activated?	Go to Step 14	Go to Step 9
7	Test the right front door handle lift switch signal circuit of the PDM for an open or high resistance. Refer to Circuit Testing and Wiring Repairs . Did you find and correct the condition?	Go to Step 22	Go to Step 13
	Test the right front door handle lift switch signal circuit of the RCDLR for		

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

8	an open or high resistance. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the condition?	Go to Step 22	Go to Step 15
9	Test the door latch motor control circuit for an open, high resistance or short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the condition?	Go to Step 22	Go to Step 10
10	Test the door unlatch motor control circuit for an open, high resistance or short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the condition?	Go to Step 22	Go to Step 16
11	Test the door handle switch signal circuit of the unlatch enable switch for a short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the condition?	Go to Step 22	Go to Step 17
12	Test the door handle switch signal circuit of the unlatch enable switch for an open or high resistance. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the condition?	Go to Step 22	Go to Step 13
13	Test the front passenger door handle switch ground circuit for an open or high resistance. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the condition?	Go to Step 22	Go to Step 17
14	Inspect for poor connections at the harness connector of the front passenger door latch assembly. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> . Did you find and correct the condition?	Go to Step 22	Go to Step 18
15	Inspect for poor connections at the harness connector of the RCDLR. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> . Did you find and correct the condition?	Go to Step 22	Go to Step 19
	Inspect for poor connections at the		

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

16	harness connector of the PDM. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> . Did you find and correct the condition?	Go to Step 22	Go to Step 20
17	Inspect for poor connections at the harness connector of the front passenger exterior door handle switch. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> . Did you find and correct the condition?	Go to Step 22	Go to Step 21
18	Replace the front passenger door lock assembly. Refer to <u>Front Side Door Lock Replacement</u> . Did you complete the replacement?	Go to Step 22	-
19	Replace the RCDLR. Refer to <u>Control Module References</u> for replacement, setup and programming. Did you complete the replacement?	Go to Step 22	-
20	Replace the PDM. Refer to <u>Control Module References</u> for replacement, setup and programming. Did you complete the replacement?	Go to Step 22	-
21	Replace the front passenger exterior door handle switch. Refer to <u>Front Side Door Outside Handle Replacement</u> . Did you complete the replacement?	Go to Step 22	-
22	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 2

POWER DOOR LOCKS INOPERATIVE**Diagnostic Aids**

A short to ground in any door lock or unlock control circuit will most likely open the 15-amp DR LK/TRUNK fuse located in the instrument panel (I/P) fuse block and cause all door lock functions to become inoperative. However, if the lock or unlock control circuit is shorted to ground and the DR LK/TRUNK fuse does not open, the most likely affect will be that all door locks will be inoperative in one direction, i.e. if the unlock control circuit is shorted to ground, all doors may lock, but will not unlock, or, if the lock control circuit is shorted to ground, all

doors may unlock, but will not lock.

Test Description

The numbers below refer to the step numbers on the diagnostic table.

4: This step determines if the malfunction may be caused by a short to ground in the battery positive voltage circuit of the body control module (BCM). The BCM provides the voltage needed to power all door lock actuator control circuits. A short to ground in the battery positive voltage circuit of the BCM will open the DR LK/TRUNK 15-amp fuse in the I/P fuse block and cause all door lock functions to become inoperative. While following the steps of this procedure, be sure you are testing the battery voltage circuit of the BCM that is associated with the door lock system. Use the door lock actuator schematics at the front of the doors article in order to correctly identify the appropriate circuit.

6: This step determines if the malfunction may be caused by an open in the battery positive voltage circuit of the BCM. The BCM provides the voltage needed to power all door lock actuator control circuits. An open in the BCM battery positive voltage circuit of the BCM will cause all door lock functions to be inoperative. While following the steps of this procedure, be sure you are testing the battery voltage circuit of the BCM that is associated with the door lock system. Use the door lock actuator schematics at the front of the doors article in order to correctly identify the appropriate circuit.

7: This step determines if the malfunction may be caused by an open in the ground circuit of the BCM. The BCM provides the ground path for all door lock actuator control circuits. While following the steps of this procedure, be sure you are testing the ground circuit of the BCM that is associated with the door lock system. Use the door lock actuator schematics at the front of the doors article in order to correctly identify the appropriate circuit.

Power Door Locks Inoperative

Step	Action	Yes	No
Schematic Reference: <u>Door Lock/Indicator Schematics</u> Connector End View Reference: <u>Power Door Systems Connector End Views</u> DEFINITION: All door lock functions are inoperative from any switch or key FOB.			
1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	Verify that the all doors and switches power door locks inoperative fault is present. Does the power door locks system operate normally?	Go to <u>Testing for Intermittent Conditions and</u>	

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

		<u>Poor Connections</u>	Go to Step 3
3	Is the DR LK/TRUNK fuse open?	Go to Step 4	Go to Step 5
4	Test the battery positive voltage circuit of the body control module (BCM) for a short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the condition?	Go to Step 14	Go to Step 8
5	Test the door lock and unlock control circuits for a short to ground or an open. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the condition?	Go to Step 14	Go to Step 6
6	Test the battery positive voltage circuit of the BCM for an open. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the condition?	Go to Step 14	Go to Step 7
7	Test the ground circuit of the BCM for an open. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the condition?	Go to Step 14	Go to Step 10
8	Test the door lock actuator lock control circuits for a short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the condition?	Go to Step 14	Go to Step 9
9	Test the door lock actuator unlock control circuit for a short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the condition?	Go to Step 14	Go to Step 11
10	Test the door lock actuator lock control circuit for an open. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the condition?	Go to Step 14	Go to Step 12
11	Test the driver door lock actuator unlock control circuit for a short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find and correct the condition?	Go to Step 14	Go to Step 12
	Inspect for poor connections at the harness connector of the BCM. Refer to		

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

12	<u>Testing for Intermittent Conditions and Poor Connections and Connector Repairs</u> Did you find and correct the condition?	Go to Step 14	Go to Step 13
13	Replace the BCM. Refer to <u>Control Module References</u> for replacement, setup and programming. Did you complete the replacement?	Go to Step 14	-
14	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 2

POWER DOOR LOCK KEY CYLINDER SWITCHES INOPERATIVE

Power Door Lock Key Cylinder Switches Inoperative

Step	Action	Yes	No
Schematic Reference: <u>Door Lock/Indicator Schematics</u> Connector End View Reference: <u>Power Door Systems Connector End Views</u> DEFINITION: The key cylinder Lock/Unlock function is inoperative.			
1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	Verify that the power door locks key cylinder switches inoperative fault is present. Does the power door locks key cylinder switches system operate normally?	Go to <u>Testing for Intermittent Conditions and Poor Connections</u>	Go to Step 3
3	Does the power door locks system operate normally?	Go to Step 4	Go to <u>Symptoms - Doors</u>
4	1. Close all of the doors. 2. Install a scan tool. 3. With the scan tool, observe the appropriate Left Front (LF) or Right Front (RF) Key Cylinder Lock Switch parameter in the Data Display Inputs list of the body control module (BCM).		

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

	Does the Key Cylinder Lock Switch parameter display the Idle state?	Go to Step 5	Go to Step 6
5	<ol style="list-style-type: none"> 1. Insert the door key into the inoperative door lock cylinder switch. 2. With the scan tool, observe the appropriate LF or RF Key Cylinder Lock Switch parameter in the Data Display Inputs list of the BCM. 3. Turn the door key cylinder first to the LOCK position and then to the UNLOCK position. <p>Did the Key Cylinder LOCK Switch parameter change from the Idle state to the Lock and UNLOCK states as expected?</p>	Go to Step 12	Go to Step 7
6	<p>Disconnect the harness connector of the inoperative door lock cylinder switch.</p> <p>Does the Key Cylinder Lock Switch parameter display the Idle state?</p>	Go to Step 11	Go to Step 9
7	<ol style="list-style-type: none"> 1. Disconnect the harness connector of the inoperative door lock cylinder switch. 2. Connect a 3-amp fused jumper wire between the appropriate key switch lock or unlock signal circuit of the harness connector and a ground. 3. With the scan tool, observe the appropriate Key Cylinder Lock Switch parameter. <p>Did the Key Cylinder Lock Switch parameter display the appropriate state?</p>	Go to Step 8	Go to Step 10
	<ol style="list-style-type: none"> 1. Connect the 3-amp fused jumper wire between the inoperative key switch lock or unlock signal circuit and the ground circuit of 		

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

8	<p>the harness connector.</p> <p>2. With the scan tool, observe the inoperative Key Cylinder Lock Switch parameter.</p> <p>Did the Key Cylinder Lock Switch parameter display the appropriate state?</p>	Go to Step 11	Go to Step 13
9	<p>Test the inoperative door lock cylinder switch signal circuit for a short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> .</p> <p>Did you find and correct the condition?</p>	Go to Step 16	Go to Step 12
10	<p>Test the inoperative door lock cylinder switch signal circuit for an open. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> .</p> <p>Did you find and correct the condition?</p>	Go to Step 16	Go to Step 12
11	<p>Inspect for poor connections at the harness connector of the inoperative door lock cylinder switch. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> .</p> <p>Did you find and correct the condition?</p>	Go to Step 16	Go to Step 14
12	<p>Inspect for poor connections at the harness connector of the BCM. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> .</p> <p>Did you find and correct the condition?</p>	Go to Step 16	Go to Step 15
13	<p>Repair the open ground circuit of the door lock cylinder switch. Refer to <u>Wiring Repairs</u> in Wiring Systems.</p> <p>Did you complete the repair?</p>	Go to Step 16	-
14	<p>Replace the inoperative door lock cylinder switch. Refer to <u>Door Lock Cylinder Replacement</u>.</p> <p>Did you complete the replacement?</p>	Go to Step 16	-
15	<p>Replace the BCM. Refer to <u>Control Module References</u> for replacement,</p>		

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

	setup and programming. Did you complete the replacement?	Go to Step 16	-
16	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 2

POWER DOOR LOCKS INOPERATIVE - DEADBOLT

Diagnostic Aids

Central Door Lock and Deadbolt functions are controlled by the rear integration module (RIM), the individual door modules and lock actuators, the driver door key lock cylinder, which is mounted in the driver door and the key cylinder lock switch, which is contained within the driver door lock actuator. For more information on these components and features, refer to **Power Door Locks Description and Operation**.

Test Description

The numbers below refer to the step numbers on the diagnostic table.

4: This step verifies that the keyless entry remote transmitter is functional for the test procedures that follow in steps 7 and 8. The remote transmitter must be used in place of the driver door key cylinder when it is the driver door deadbolt motor being tested in step 8.

8: This step determines if the deadbolt motor has failed. If it is a passenger door deadbolt being tested in this step, either the driver door key cylinder or the keyless entry remote transmitter may be used to activate the deadbolt. However, if it is the driver door deadbolt being tested in this step, the driver door key cylinder cannot be used to activate the deadbolt because the lock actuator connector containing the key cylinder input circuit has been disconnected in step 7. Care must be taken when observing the test lamp and attempting to activate the deadbolt motor from either the remote transmitter or the driver door key cylinder. If you are using the remote transmitter, press the transmitter Lock button twice within 3 seconds; the test lamp should flash once. If you are using the driver door key cylinder, either turn the key to the lock position and hold it there for 3 seconds or longer, or, turn it to the lock position twice within 3 seconds; the test lamp should flash once. Repeating either of these activations, however, will not produce another flash of the test lamp until the door has been commanded to undeadbolt. For either method of activation, remember that the door must be commanded to undeadbolt between each deadbolt command in order for the test to be accurate. Failure to follow these guidelines may result in misdiagnosis and the unnecessary replacement of parts.

12: This step determines if it is the door module or a deadbolt motor control circuit that has failed.

Power Door Locks Inoperative - Deadbolt

Step	Action	Yes	No
Schematic Reference: <u>Door Lock/Indicator Schematics</u> Connector End View Reference: <u>Power Door Systems Connector End Views</u> DEFINITION: A door lock does not deadbolt, or, none of the door locks will deadbolt. This test is used when only a deadbolt function of the door lock system is inoperative and assumes that all DTCs have been diagnosed.			
1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	Review the Central Door Lock and Deadbolt information of the Power Door Locks Description and Operation in order to verify that the Power Door Locks Inoperative - Deadbolt complaint is present. Refer to <u>Power Door Locks Description and Operation</u> . Does the Central Door Lock and Deadbolt system operate as described in the Description and Operation?	Go to <u>Testing for Intermittent Conditions and Poor Connections</u>	Go to Step 3
3	1. Install a scan tool. 2. With the scan tool, observe the Door Cylinder Switch parameter in the driver door module (DDM) data list. 3. Insert the door key into the driver door lock cylinder, turn it to the Lock position and hold it for 3 seconds. Does the Door Cylinder Switch parameter change from Idle to the appropriate state?	Go to Step 4	Go to Step 5
4	Verify that the door locks can be operated from the keyless entry remote transmitter. Do the door locks operate when using the remote transmitter?	Go to Step 7	Go to <u>Keyless Entry System Inoperative</u>
	1. Turn OFF the ignition. 2. Disconnect the harness connector		

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

5	<p>from the driver door lock actuator.</p> <ol style="list-style-type: none"> Turn ON the ignition, with the engine OFF. Install a 3-amp fused jumper wire between the key cylinder lock switch signal circuit and the key cylinder lock switch ground circuit of the harness connector. With the scan tool, observe the Door Cylinder Switch parameter. <p>Does the Door Cylinder Switch parameter change from Idle to the appropriate state?</p>	Go to Step 13	Go to Step 6
6	<ol style="list-style-type: none"> Install a 3-amp fused jumper wire between the key cylinder lock switch signal circuit and a good ground. With the scan tool, observe the Door Cylinder Switch parameter. <p>Does the Door Cylinder Switch parameter change from Idle to the appropriate state?</p>	Go to Step 10	Go to Step 9
7	<ol style="list-style-type: none"> Turn OFF the ignition. Disconnect the harness connector from the door lock actuator associated with the inoperative deadbolt motor. Turn ON the ignition, with the engine OFF. Connect a test lamp between the deadbolt motor control circuit of the harness connector and a good ground. <p>Does the test lamp illuminate?</p>	Go to Step 11	Go to Step 8
	<ol style="list-style-type: none"> Make sure the door associated with the inoperative deadbolt 		

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

8	<p>motor locks and unlocks properly.</p> <ol style="list-style-type: none"> 2. Make sure the test lamp is still connected between the deadbolt motor control circuit of the harness connector and a good ground. 3. If the door being tested is the driver door, attempt to deadbolt the door by pressing the Lock button on the keyless entry remote transmitter twice within 3 seconds. 4. If the door being tested is one of the passenger doors, attempt to deadbolt the door by using either the remote transmitter or the driver door key cylinder. <p>Did the test lamp flash once?</p>	Go to Step 14	Go to Step 12
9	<p>Test the door key switch signal circuit for an open or high resistance. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> .</p> <p>Did you find and correct the condition?</p>	Go to Step 20	Go to Step 15
10	<p>Test the door key switch ground circuit for an open or high resistance. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> .</p> <p>Did you find and correct the condition?</p>	Go to Step 20	Go to Step 15
11	<p>Test the driver door lock actuator deadbolt control circuit for a short to voltage. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> .</p> <p>Did you find and correct the condition?</p>	Go to Step 20	Go to Step 16
12	<p>Test the driver door lock actuator deadbolt control circuit for an open or short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> .</p> <p>Did you find and correct the condition?</p>	Go to Step 20	Go to Step 16
13	<p>Inspect for poor connections at the harness connector of the driver door lock actuator. Refer to <u>Testing for Intermittent Conditions and Poor</u></p>		

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

	<u>Connections and Connector Repairs</u> . Did you find and correct the condition?	Go to Step 20	Go to Step 17
14	Inspect for poor connections at the harness connector of the appropriate door lock actuator. Refer to <u>Testing for Intermittent Conditions and Poor Connections and Connector Repairs</u> . Did you find and correct the condition?	Go to Step 20	Go to Step 18
15	Inspect for poor connections at the harness connector of the DDM. Refer to <u>Testing for Intermittent Conditions and Poor Connections and Connector Repairs</u> . Did you find and correct the condition?	Go to Step 20	Go to Step 19
16	Inspect for poor connections at the harness connector of the appropriate door control module. Refer to <u>Testing for Intermittent Conditions and Poor Connections and Connector Repairs</u> . Did you find and correct the condition?	Go to Step 20	Go to Step 19
17	Replace the driver door lock. Refer to <u>Front Side Door Lock Replacement</u> . Did you complete the replacement?	Go to Step 20	-
18	Replace the appropriate door lock. Refer to <u>Front Side Door Lock Replacement</u> or <u>Rear Side Door Lock Replacement</u> . Did you complete the replacement?	Go to Step 20	-
19	Replace the door control module. Refer to <u>Control Module References</u> for replacement, setup and programming. Did you complete the replacement?	Go to Step 20	-
20	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 2

AUTOMATIC DOOR LOCKS INOPERATIVE

Automatic Door Locks Inoperative

Step	Action	Yes	No
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2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

Schematic Reference: Door Lock/Indicator Schematics

Connector End View Reference: Computer/Integrating Systems Connector End Views

1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	<ol style="list-style-type: none"> 1. Install a scan tool. 2. Turn the ignition ON, with the engine OFF. 3. Close all doors. 4. Shift the gear selector out of PARK. 5. Shift the gear selector into PARK. 6. Turn OFF the ignition. <p>Did the power door locks operate as expected for the mode selected?</p>	Go to <u>Testing for Intermittent Conditions and Poor Connections</u>	Go to Step 3
3	<p>With the scan tool, observe the Door Open Switch of each door in each door control module data list.</p> <p>Does the scan tool indicate that the Door Open Switch parameter is in the Closed state for all doors?</p>	Go to Step 4	Go to <u>Courtesy Lamps Malfunction</u>
4	<p>Inspect for poor connections at the harness connector of the rear integration module (RIM). Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u>.</p> <p>Did you find and correct the condition?</p>	Go to Step 6	Go to Step 5
5	<p>IMPORTANT: The Automatic Door Locks personalization mode must be reset following RIM replacement.</p> <p>Replace the RIM. Refer to <u>Control Module References</u>. Did you complete the replacement?</p>	Go to Step 6	-
6	<p>Operate the system in order to verify the repair.</p> <p>Did you correct the condition?</p>	System OK	Go to Step 2

POWER MIRRORS INOPERATIVE

Power Mirrors Inoperative

Step	Action	Yes	No
Schematic Reference: <u>Outside Rearview Mirror Schematics</u> Connector End View Reference: <u>Power Door Systems Connector End Views</u>			
1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	Verify that the personalization system operates as described Refer to <u>Vehicle Personalization</u> . Does the personalization system operate as described ?	Go to Step 3	Go to <u>Vehicle Personalization</u>
3	Verify that the Power Mirrors Inoperative complaint is present. Refer to <u>Outside Mirror Description and Operation</u> . Does the power mirror system operate as described in the Description and Operation?	Go to <u>Testing for Intermittent Conditions and Poor Connections</u>	Go to Step 4
4	<ol style="list-style-type: none"> 1. Install a scan tool. 2. Turn ON the ignition, with the engine OFF. 3. Observe the Mirror Select Switch parameter in the driver door switch assembly (DDSA) data list. 4. Place the mirror select switch in the Driver and then Passenger mirror selections. Does the Mirror Select Switch parameters indicate the appropriate mirror selections as the switch is cycled?	Go to Step 5	Go to Step 7
5	<ol style="list-style-type: none"> 1. Observe the Driver Mirror Motors Command parameters in the driver door module (DDM) data list. 2. Operate the mirror position switch to the Up, Down, Left and Right positions. 		

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

	Did the Driver Mirror Motors Command parameters change from the Idle state to the Up, Down, Left and Right states as expected?	Go to Step 6	Go to Step 8
6	<ol style="list-style-type: none"> 1. Disconnect the inoperative mirror harness connector from the door module. 2. Connect a test lamp between the appropriate motor control circuits at the door module pins. 3. With the mirror select switch, select the inoperative mirror. 4. With the mirror position switch, attempt to operate the mirror in both directions of the inoperative axis. <p>Does the test lamp illuminate in both directions?</p>	Go to Step 9	Go to Step 8
7	<p>Inspect for poor connections at the harness connector of the DDSA. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> .</p> <p>Did you find and correct the condition?</p>	Go to Step 13	Go to Step 12
8	<p>Inspect for poor connections at the harness connector of the door control module associated with the inoperative power mirror. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> .</p> <p>Did you find and correct the condition?</p>	Go to Step 13	Go to Step 11
9	<p>Inspect for poor connections at the harness connector of the inoperative outside rear view mirror. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> .</p> <p>Did you find and correct the condition?</p>	Go to Step 13	Go to Step 10
10	Replace the inoperative outside rear view mirror. Refer to <u>Power Mirror</u>		-

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

	<u>Replacement.</u> Did you complete the replacement?	Go to Step 13	
11	Replace the door control module associated with the inoperative mirror. Refer to <u>Control Module References</u> for replacement, setup and programming. Did you complete the replacement?	Go to Step 13	-
12	Replace the driver door switch assembly. Refer to <u>Power Mirror Switch Replacement.</u> Did you complete the replacement?	Go to Step 13	-
13	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 2

POWER MIRROR FOLDING INOPERATIVE

Power Mirror Folding Inoperative

Step	Action	Yes	No
Schematic Reference: <u>Outside Rearview Mirror Schematics</u> Connector End View Reference: <u>Power Door Systems Connector End Views</u>			
1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	Verify that the personalization system operates as described, Refer to <u>Vehicle Personalization</u> . Does the personalization system operate as described ?	Go to Step 3	Go to <u>Vehicle Personalization</u>
3	Verify that the Power Mirrors - Folding Inoperative complaint is present. Does the power folding mirrors system operate as described in the Description and Operation?	Go to <u>Testing for Intermittent Conditions and Poor Connections</u>	Go to Step 4
	<ol style="list-style-type: none"> 1. Turn OFF the ignition. 2. Install a scan tool. 3. Turn ON the ignition, with the engine OFF. 4. Observe the Mirror Fold Switch parameter in the driver door 		

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

4	<p>switch assembly (DDSA) data list while momentarily pressing the power mirror fold switch.</p> <p>Does the parameter display In or Out when momentarily pressing the fold switch and Idle when it is not momentarily pressed?</p>	Go to Step 5	Go to Step 10
5	<ol style="list-style-type: none"> 1. Turn OFF the ignition. 2. Disconnect the door module harness connector from the door module associated with the inoperative mirror. 3. Connect a test lamp between the extend and retract circuits at the door module pins. 4. Turn ON the ignition, with the engine OFF. 5. Observe the test lamp, while momentarily pressing the power mirror fold switch. <p>Does the test lamp illuminate each time the power mirror fold switch is momentarily pressed?</p>	Go to Step 6	Go to Step 9
6	<p>Test the folding mirror motor control circuits of the inoperative mirror for an open or a short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> .</p> <p>Did you find and correct the condition?</p>	Go to Step 14	Go to Step 7
7	<p>Test the folding mirror motor control circuits of the inoperative mirror for a short to battery voltage. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> .</p> <p>Did you find and correct the condition?</p>	Go to Step 14	Go to Step 8
	<p>Inspect for poor connections at the harness connector of the inoperative</p>		

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

8	power mirror. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> . Did you find and correct the condition?	Go to Step 14	Go to Step 11
9	Inspect for poor connections at the harness connector of the door control module associated with the inoperative mirror. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> . Did you find and correct the condition?	Go to Step 14	Go to Step 12
10	Inspect for poor connections at the harness connector of the DDSA. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> . Did you find and correct the condition?	Go to Step 14	Go to Step 13
11	Replace the inoperative power mirror. Refer to <u>Power Mirror Replacement</u> . Did you complete the repair?	Go to Step 14	-
12	Replace the door control module associated with the inoperative mirror. Refer to <u>Control Module References</u> for replacement, setup and programming. Did you complete the repair?	Go to Step 14	-
13	Replace DDSA. Refer to <u>Door Lock and Side Window Switch Replacement - Driver Side</u> . Did you complete the repair?	Go to Step 14	-
14	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 2

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

Outside Mirrors Automatic Day-Night Feature Inoperative

Step	Action	Value(s)	Yes	No
Schematic Reference: <u>Inside Rearview Mirror Schematics</u> Connector End View Reference: <u>Stationary Windows Connector End Views</u>				
1	Did you perform the Diagnostic System Check - Vehicle?	-	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	1. Turn ON the ignition, with the engine OFF. 2. Cover the sensor on the mirror back, facing the front window. 3. Shine a bright light into the sensor on the mirror face, facing the rear window. Does the inside rearview mirror darken?	-	Go to Step 3	Go to <u>Automatic Day-Night Mirrors Inoperative</u>
3	While shining a bright light into the sensor on the mirror face, facing the rear window, observe the driver outside rearview mirror. Does the driver outside rearview mirror darken?	-	Go to <u>Testing for Intermittent Conditions and Poor Connections</u>	Go to Step 4
4	1. Turn OFF the ignition. 2. Disconnect the C 3 harness connector at the driver door module (DDM). 3. Turn ON the ignition, with the engine OFF. 4. Cover the sensor on the mirror back, facing the front window. 5. Shine a bright light into the sensor on the mirror face, facing the rear window. 6. Measure the voltage	0.75-1.5 V		

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

	between the automatic day/night mirror signal circuit and the automatic day/night mirror low reference circuit at the DDM C 3 harness connector.			
	Is the voltage within the specified range?		Go to Step 7	Go to Step 5
5	Is the voltage greater than the specified value?	1.5 V	Go to Step 18	Go to Step 6
6	Measure the voltage between the automatic day/night mirror signal circuit of the driver outside mirror element and ground. Is the voltage within the specified range?	0.75-1.5 V	Go to Step 13	Go to Step 12
7	<ol style="list-style-type: none"> 1. Turn OFF the ignition. 2. Reconnect the C 3 harness connector at the DDM. 3. Carefully disconnect the driver outside rearview mirror face. 4. Turn ON the ignition, with the engine OFF. 5. Cover the sensor on the mirror back, facing the front window. 6. Shine a bright light into the sensor on the mirror face, facing the rear window. 7. Measure the voltage between the automatic day/night mirror signal circuit and the automatic day/night mirror low reference circuit at the driver outside rearview mirror element. 	0.75-1.5 V		

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

	Is the voltage within the specified range?		Go to Step 14	Go to Step 8
8	Is the voltage greater than the specified value?	1.5 V	Go to Step 18	Go to Step 9
9	<ol style="list-style-type: none"> 1. Turn OFF the ignition. 2. Disconnect the C 3 harness connector at the DDM. 3. Measure the resistance of the automatic day/night mirror signal circuit of the driver outside rearview mirror element between the driver outside rearview mirror element and the DDM. <p>Is the resistance less than the specified value?</p>	3 ohms	Go to Step 10	Go to Step 15
10	<p>Measure the resistance between the automatic day/night mirror signal circuit of the driver outside rearview mirror element to ground.</p> <p>Is the resistance within the specified range?</p>	OL	Go to Step 11	Go to Step 15
11	<p>Measure the resistance of the automatic day/night mirror low reference circuit of the driver outside rearview mirror element between the driver outside rearview mirror element and the DDM.</p> <p>Is the resistance less than the specified value?</p>	3 ohms	Go to Step 17	Go to Step 15
12	<p>Test the automatic day/night mirror signal circuit of the driver outside rearview mirror element for an open, high resistance or short to ground. Refer to Circuit Testing and Wiring Repairs .</p> <p>Did you find or correct the</p>	-		Go to Step

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

	condition?		Go to Step 23	16
13	Test the automatic day/night mirror low reference circuit of the driver outside rearview mirror element for an open, high resistance or short to ground. Refer to <u>Circuit Testing</u> and <u>Wiring Repairs</u> . Did you find or correct the condition?	-	Go to Step 23	Go to Step 16
14	Inspect for poor connections at the harness connector of the driver outside rearview mirror face. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> . Did you find or correct the condition?	-	Go to Step 23	Go to Step 19
15	Inspect for poor connections at the harness connector of the driver outside rearview mirror. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> . Did you find or correct the condition?	-	Go to Step 23	Go to Step 20
16	Inspect for poor connections at the harness connector of the inside rearview mirror. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> . Did you find or correct the condition?	-	Go to Step 23	Go to Step 21
17	Inspect for poor connections at the harness connector of the DDM. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and	-		

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

	<u>Connector Repairs</u> . Did you find or correct the condition?		Go to Step 23	Go to Step 22
18	IMPORTANT: A short to voltage in the signal circuit of the driver outside rearview mirror element will cause permanent damage to both the driver outside rearview mirror element and the inside rearview mirror. Locate and repair a short to voltage in the automatic day/night mirror signal circuit of the driver outside rearview mirror element. Refer to <u>Wiring Repairs</u> .Did you complete the repair?	-	Go to Step 23	-
19	Replace the driver outside rearview mirror face. Refer to <u>Power Mirror Replacement</u> . Did you complete the replacement?	-	Go to Step 23	-
20	Replace the driver outside rearview mirror. Refer to <u>Outside Rearview Mirror Glass Replacement</u> . Did you complete the replacement?	-	Go to Step 23	-
21	Replace the inside rearview mirror. Refer to <u>Inside Rearview Mirror Replacement</u> . Did you complete the replacement?	-	Go to Step 23	-
22	Replace the DDM. Refer to <u>Control Module References</u> for replacement, setup and programming. Did you complete the replacement?	-	Go to Step 23	-
	Operate the system in order to			

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

23	verify the repair. Did you correct the condition?	-	System OK	Go to Step 2
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POWER MIRROR TILT INOPERATIVE IN REVERSE

Power Mirror Tilt Inoperative in Reverse

Step	Action	Yes	No
Schematic Reference: <u>Outside Rearview Mirror Schematics</u> Connector End View Reference: <u>Power Door Systems Connector End Views</u>			
1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	Verify that the reverse park aid mirror option is turned ON for the current driver. Refer to <u>Vehicle Personalization</u> . Was the option ON or did you turn the reverse park aid option ON?	Go to Step 3	Go to <u>Vehicle Personalization</u>
3	With the mirror control switches, operate the passenger door mirror in both the Up and Down directions. Does the passenger door mirror operate in both directions?	Go to Step 4	Go to <u>Power Mirrors Inoperative</u>
4	1. Start the engine. 2. With the brake pedal depressed, move the gear shift selector into the reverse position. Does the passenger outside rearview mirror tilt downward 10 degrees?	Go to Step 7	Go to Step 5
5	Inspect for poor connections at the harness connector of the passenger door module (PDM). Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> . Did you find and correct the condition?	Go to Step 7	Go to Step 6
6	IMPORTANT: Perform the setup procedure for the replacement door module. Refer to <u>Door Control Module Programming and Setup in Programming and Setup</u> .		-

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

	Replace the PDM. Refer to <u>Control Module References</u> .Did you complete the replacement?	Go to Step 7	
7	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 2

HEATED MIRRORS INOPERATIVE - ONE

Heated Mirrors Inoperative - One

Step	Action	Yes	No
Schematic Reference: <u>Outside Rearview Mirror Schematics</u> Connector End View Reference: <u>Power Door Systems Connector End Views</u>			
1	Did you perform the Diagnostic System Check - Vehicle?	Go to Step 2	Go to <u>Diagnostic System Check - Vehicle</u>
2	Verify that the Heated Mirrors Inoperative - One complaint is present. Does the heated mirrors system operate as described in the Description and Operation?	Go to <u>Testing for Intermittent Conditions and Poor Connections</u>	Go to Step 3
3	<ol style="list-style-type: none"> 1. Turn OFF the ignition. 2. Disconnect the C 4 harness connector at the door control module associated with the inoperative heated mirror. 3. Ensure that all other harness connectors to the door control module remain connected. 4. Connect a test lamp between the mirror heating element supply voltage circuit and the mirror heating element low reference circuit at the door control module pins. 5. Turn ON the ignition, with the engine OFF. 		

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

	Does the test lamp illuminate?	Go to Step 9	Go to Step 4
4	While observing the test lamp, command the mirrors to heat by turning ON the rear window defroster. Does the test lamp illuminate?	Go to Step 5	Go to Step 9
5	<ol style="list-style-type: none"> 1. Turn OFF the ignition. 2. Carefully remove the mirror face of the mirror that does not heat. 3. Disconnect the heated mirror harness connector from the mirror face. 4. Connect a test lamp between the mirror heater circuits of the harness connector. 5. Turn ON the ignition, with the engine OFF. Does the test lamp illuminate?	Go to Step 7	Go to Step 6
6	While observing the test lamp, command the mirrors to heat by turning ON the rear window defroster. Does the test lamp illuminate?	Go to Step 8	Go to Step 7
7	Inspect for poor connections at the harness connector of the inoperative heated rearview mirror. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> . Did you find and correct the condition?	Go to Step 13	Go to Step 12
8	Inspect for poor connections at the harness connector of the inoperative heated mirror face. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector Repairs</u> . Did you find and correct the condition?	Go to Step 13	Go to Step 10
9	Inspect for poor connections at the C 4 harness connector of the door control module associated with the inoperative outside rearview mirror. Refer to <u>Testing for Intermittent Conditions and Poor Connections</u> and <u>Connector</u>		

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

	<u>Repairs</u> . Did you find and correct the condition?	Go to Step 13	Go to Step 11
10	Replace the inoperative heated rearview mirror face. Refer to <u>Outside Rearview Mirror Glass Replacement</u> . Did you complete the replacement?	Go to Step 13	-
11	IMPORTANT: Perform the setup procedure for the replacement door module. Refer to <u>Door Control Module Programming and Setup</u> . Replace the door control module associated with the inoperative outside rearview mirror. Refer to <u>Control Module References</u> .Did you complete the replacement?	Go to Step 13	-
12	Replace the inoperative heated rearview mirror. Refer to <u>Power Mirror Replacement</u> . Did you complete the replacement?	Go to Step 13	-
13	Operate the system in order to verify the repair. Did you correct the condition?	System OK	Go to Step 2

REPAIR INSTRUCTIONS**REAR SIDE DOOR WINDOW SWITCH REPLACEMENT**

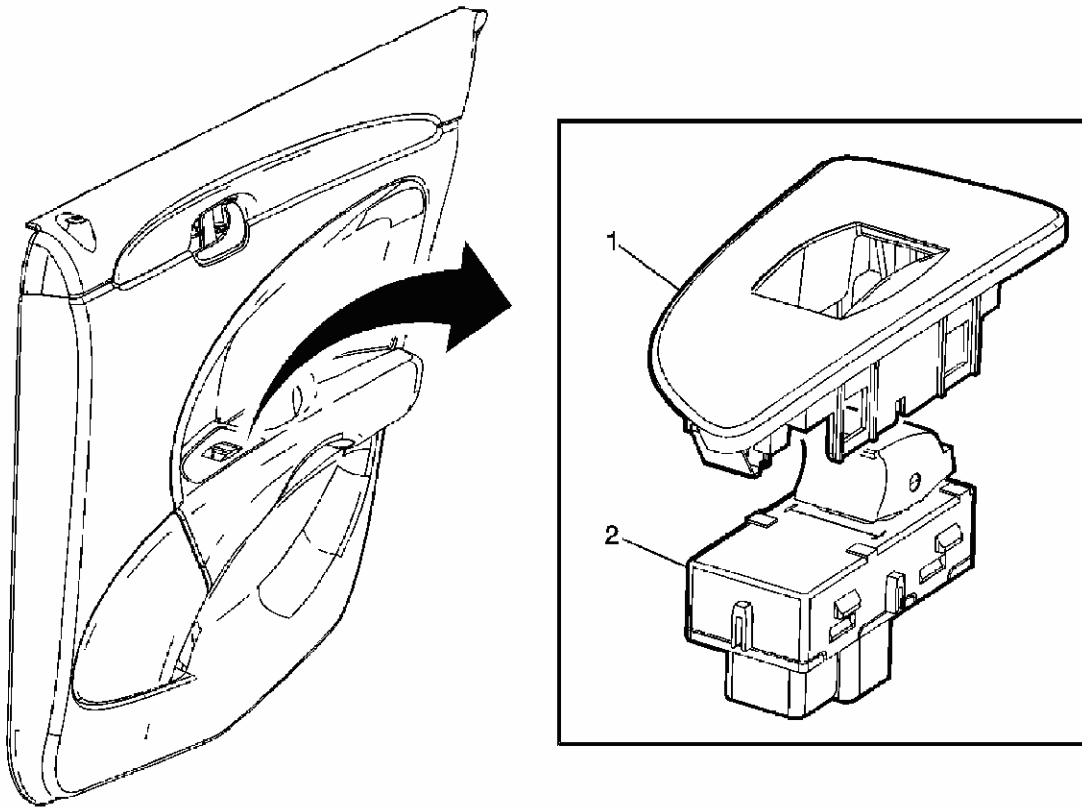


Fig. 41: Identifying Rear Side Door Window Switch
Courtesy of GENERAL MOTORS CORP.

Rear Side Door Window Switch Replacement

Callout	Component Name
Fastener Tightening Specifications: Refer to <u>Fastener Tightening Specifications</u> .	
Preliminary Procedure: Remove the door trim panel. Refer to <u>Rear Side Door Trim Panel Replacement</u> .	
1	Rear Side Door Switch Plate
2	Rear Side Door Window Switch Assembly

DOOR LOCK AND SIDE WINDOW SWITCH REPLACEMENT - DRIVER SIDE

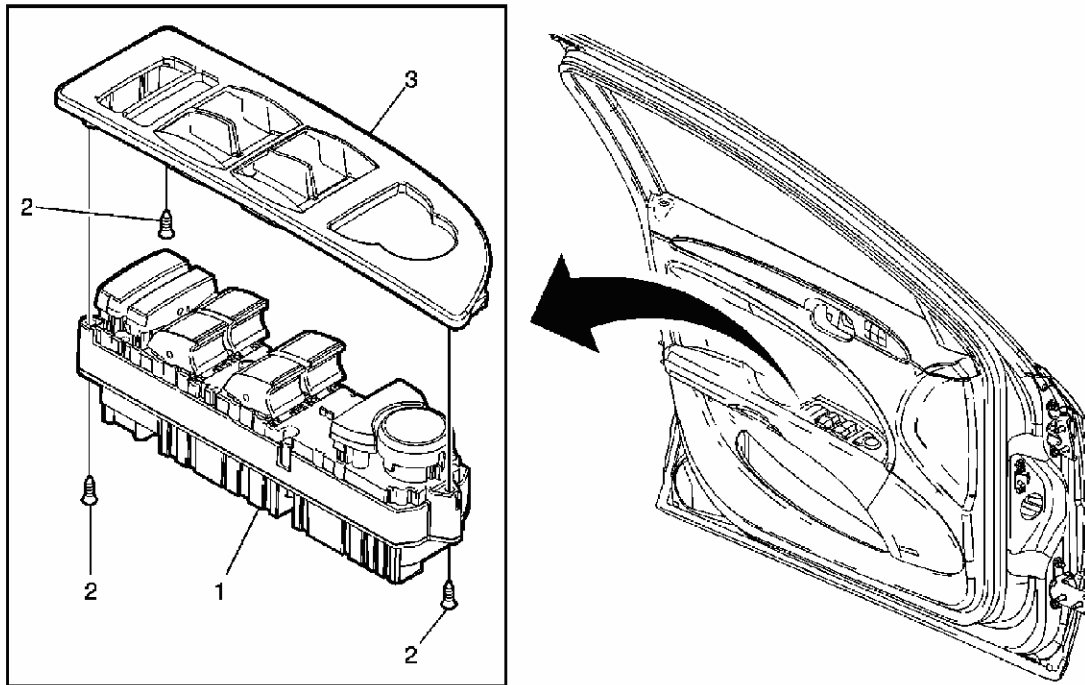


Fig. 42: View Of Driver Side Door Lock and Side Window Switch
Courtesy of GENERAL MOTORS CORP.

Door Lock and Side Window Switch Replacement - Driver Side

Callout	Component Name
NOTE: Refer to <u>Fastener Notice</u> .	
Fastener Tightening Specifications: Refer to <u>Fastener Tightening Specifications</u> . Preliminary Procedure: Remove the door trim panel. Refer to <u>Front Side Door Trim Panel Replacement</u> .	
1	Front Side Door Switch Assembly Tip: <ol style="list-style-type: none"> 1. The power window, door lock and power mirror switch are included in the one switch. 2. Disconnect the electrical connectors. 3. To disengage the switch assembly, push up on the switch assembly from the rear inside of the door trim panel.
2	Front Side Door Switch Screw (Qty: 3) Tighten: 2 N.m (18 lb in)
3	Front Side Door Switch Plate

DOOR LOCK AND SIDE WINDOW SWITCH REPLACEMENT - PASSENGER SIDE

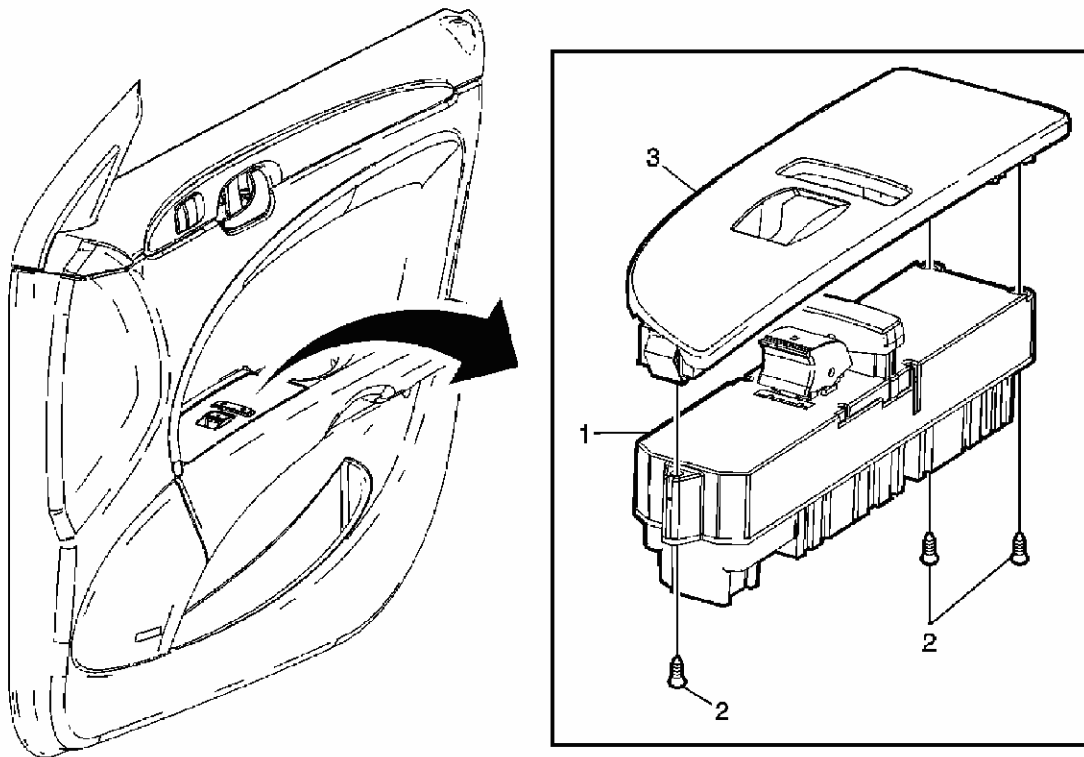


Fig. 43: View Of Passenger Side Door Lock and Side Window Switch
 Courtesy of GENERAL MOTORS CORP.

Door Lock and Side Window Switch Replacement - Passenger Side

Callout	Component Name
Preliminary Procedure: Remove the door trim panel. Refer to Front Side Door Trim Panel Replacement .	
1	Front Side Door Switch Assembly Tip: <ul style="list-style-type: none"> • To disengage the switch assembly, push up on the switch assembly from the rear inside of the door trim panel. • Disconnect the electrical connectors.
2	Front Side Door Switch Screw (Qty: 3) NOTE: Refer to Fastener Notice . Tighten: 2 N.m (18 lb in)
3	Front Side Door Switch Plate

POWER MIRROR SWITCH REPLACEMENT

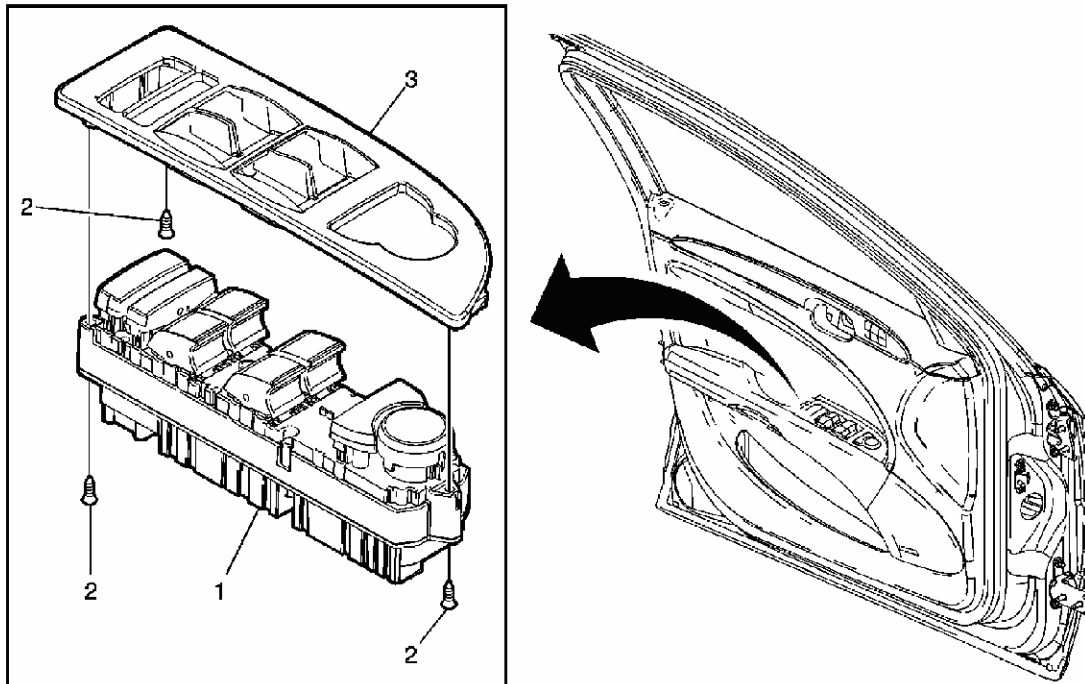


Fig. 44: Locating Power Mirror Switch
 Courtesy of GENERAL MOTORS CORP.

Power Mirror Switch Replacement

Callout	Component Name
NOTE: Refer to <u>Fastener Notice</u> .	
Fastener Tightening Specifications: Refer to <u>Fastener Tightening Specifications</u> . Preliminary Procedure: Remove the door trim panel. Refer to <u>Front Side Door Trim Panel Replacement</u> .	
1	Front Side Door Switch Assembly Tip: <ol style="list-style-type: none"> 1. The power window, door lock and power mirror switch are included in the one switch. 2. Disconnect the electrical connectors. 3. To disengage the switch assembly, push up on the switch assembly from the rear inside of the door trim panel.
2	Front Side Door Switch Screw (Qty: 3) Tighten: 2 N.m (18 lb in)

3 Front Side Door Switch Plate

FRONT SIDE DOOR TRIM PANEL REPLACEMENT

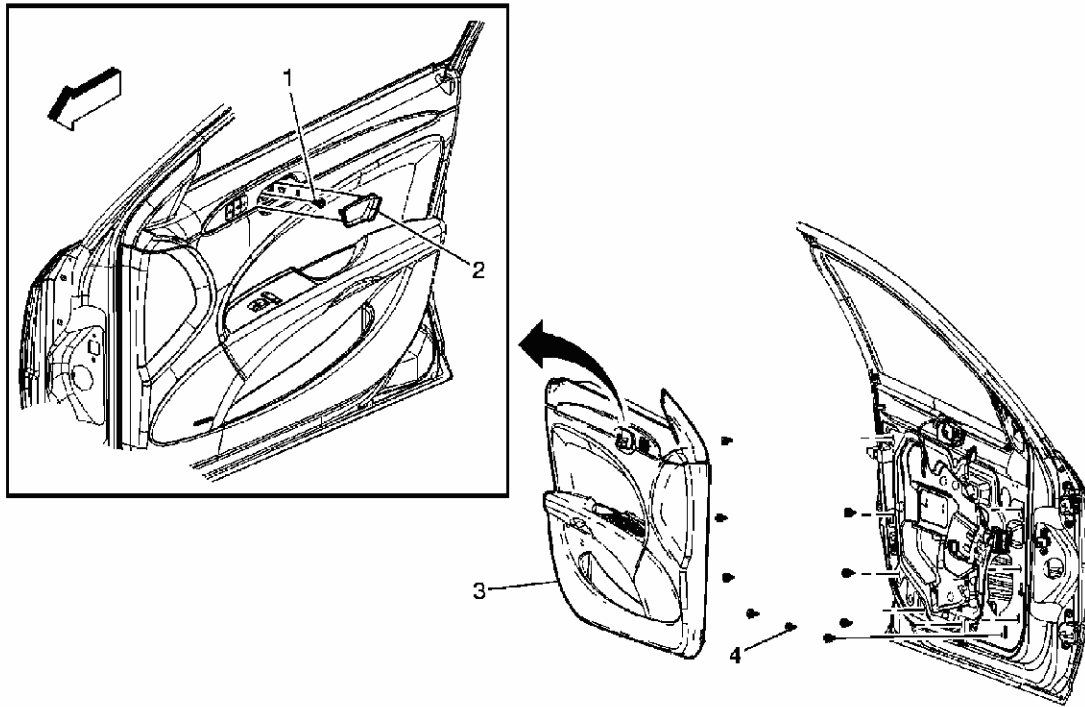


Fig. 45: Removing/Installing Front Side Door Trim Panel
 Courtesy of GENERAL MOTORS CORP.

Front Side Door Trim Panel Replacement

Callout	Component Name
NOTE: Refer to <u>Fastener Notice</u> .	
Fastener Tightening Specifications: Refer to <u>Fastener Tightening Specifications</u> .	
1	Front Side Door Inside Handle Bezel Cover
2	Front Side Door Inside Handle Screw Tighten: 3 N.m (25 lb in)
3	Front Side Door Trim Panel Tip: <ol style="list-style-type: none"> 1. Use a J 38778 Door Trim Pad Clip Remover to aid in the removal of the side door trim panel. 2. After releasing all the retainers along the outer perimeter of the door trim panel, hold the panel away from the door and lift up on the

	<p>panel to disengage the 2 clips that anchor the armrest into the door sheet metal.</p> <p>3. Disconnect the inside door handle linkage.</p> <p>4. Disconnect the electrical connectors.</p>
4	Door Trim Panel Retainer (Qty: 11)

REAR SIDE DOOR TRIM PANEL REPLACEMENT

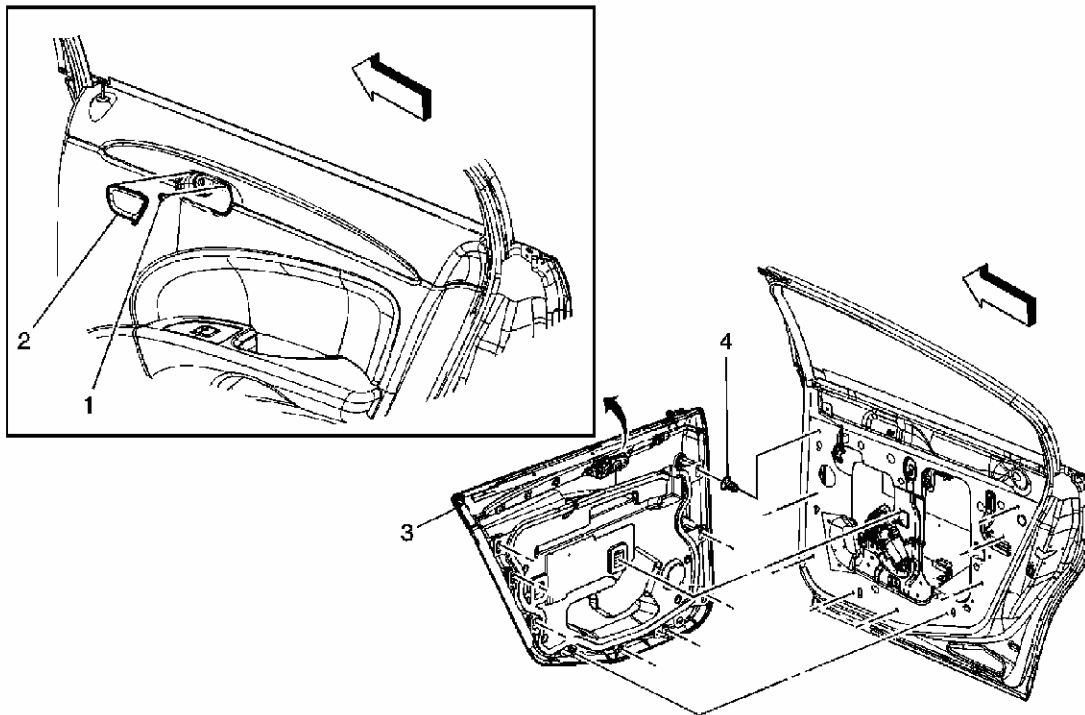


Fig. 46: Removing/Installing Rear Side Door Trim Panel
 Courtesy of GENERAL MOTORS CORP.

Rear Side Door Trim Panel Replacement

Callout	Component Name
<p>NOTE: Refer to <u>Fastener Notice</u> .</p> <p>Fastener Tightening Specifications: Refer to <u>Fastener Tightening Specifications</u> .</p>	
1	Rear Side Door Inside Handle Bezel Cover
2	Rear Side Door Inside Handle Screw
	Tighten: 3 N.m (25 lb in)
	Rear Side Door Trim Panel
	Tip:

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

3	1. Use a J 38778 Door Trim Pad Clip Remover to aid in the removal of the side door trim panel.
	2. After releasing all the retainers along the outer perimeter of the door trim panel, hold the panel away from the door and lift up on the panel to disengage the 2 clips that anchor the armrest into the door sheet metal.
	3. Disconnect the inside door handle linkage.
	4. Disconnect the electrical connectors.
4	Door Trim Panel Retainer (Qty: 9)

FRONT SIDE DOOR WATER DEFLECTOR REPLACEMENT

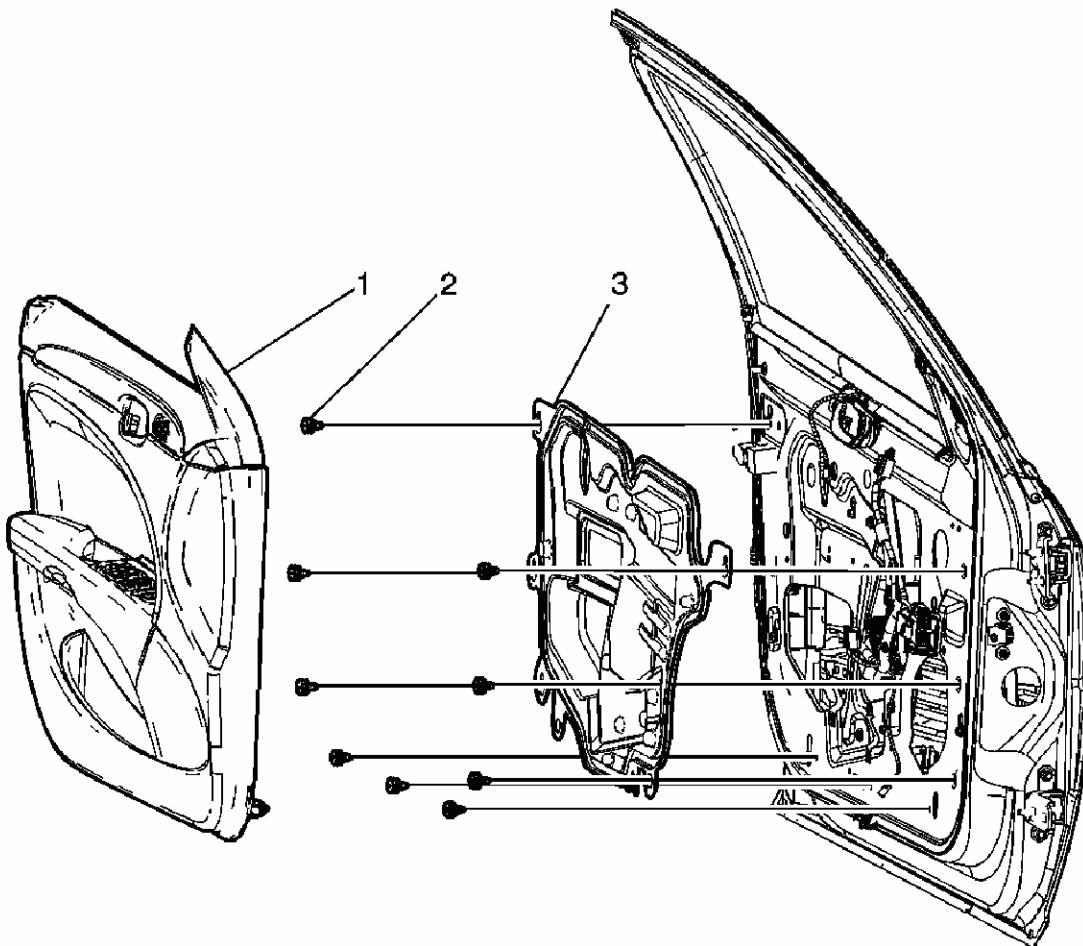


Fig. 47: Removing/Installing Front Side Door Water Deflector
Courtesy of GENERAL MOTORS CORP.

Front Side Door Water Deflector Replacement

Callout	Component Name

Fastener Tightening Specifications: Refer to **Fastener Tightening Specifications**.

1	Front Side Door Trim Assembly Refer to <u>Front Side Door Trim Panel Replacement</u> .
2	Front Side Door Trim Retainer (Qty: 9) Tip: Remove any retainers that did not come off with the trim panel.
3	Front Side Door Water Deflector Assembly

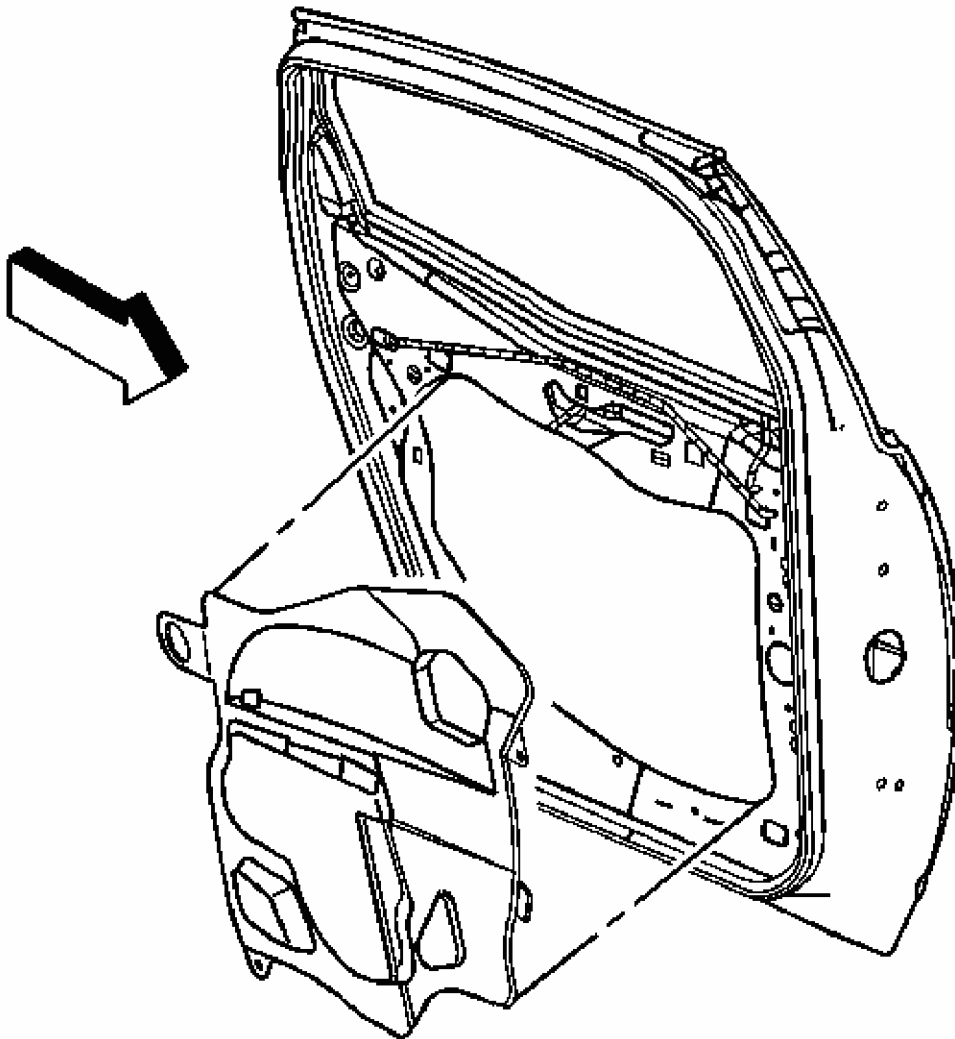
REAR SIDE DOOR WATER DEFLECTOR REPLACEMENT**Removal Procedure**

Fig. 48: Removing/Installing Rear Side Door Water Deflector
Courtesy of GENERAL MOTORS CORP.

1. Remove the rear door trim panel. Refer to Rear Side Door Trim Panel Replacement.

IMPORTANT: Use care when removing the water deflector from the inner door panel not to damage the waterproof seal.

2. Remove the water deflector.

Installation Procedure

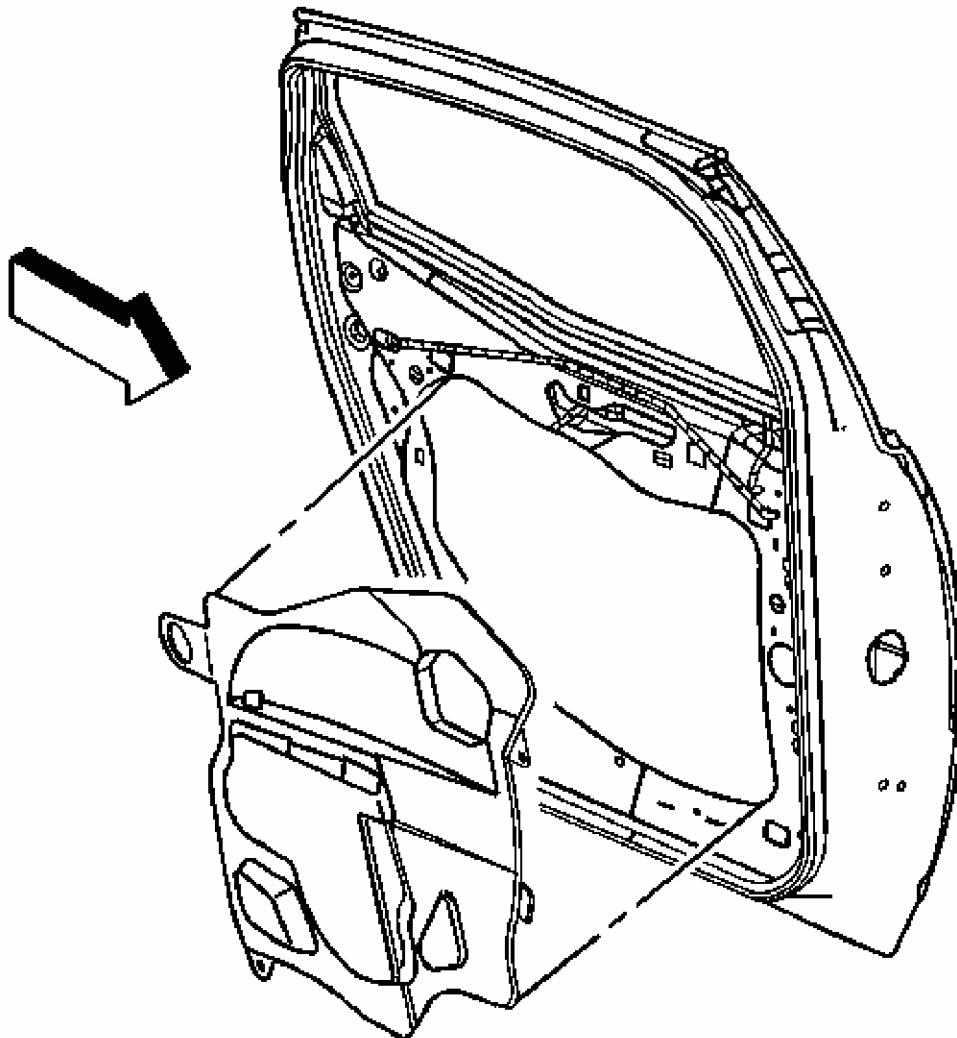


Fig. 49: Removing/Installing Rear Side Door Water Deflector
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: If the door water deflector was torn when removing, use 3M™ 58722 waterproof tape or equivalent to these areas.

1. Align the water deflector to the inner door panel.
2. Install the water deflector using a small roller to outline the water deflector in order to ensure proper seating.
3. Install the rear door trim panel. Refer to **Rear Side Door Trim Panel Replacement**.

DOOR ADJUSTMENT

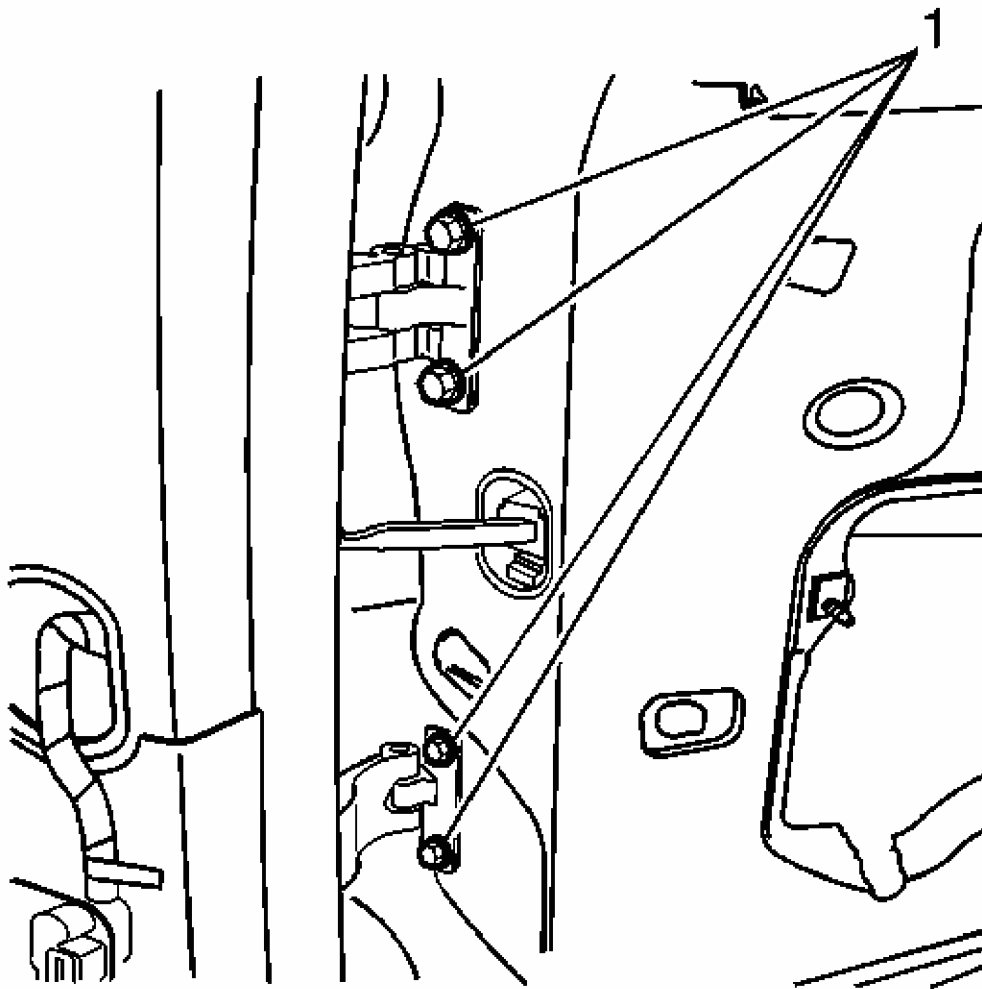


Fig. 50: View Of Door Hinge Fasteners
Courtesy of GENERAL MOTORS CORP.

IMPORTANT: If the door hinge bolts (1) are removed, the anchor plate will fall into the door causing a complete tear down to replace.

1. Loosen the hinge fasteners in order to adjust the door at the door hinge pillar in the following directions:
 - Up or down
 - In or out
2. Reposition the door as needed.

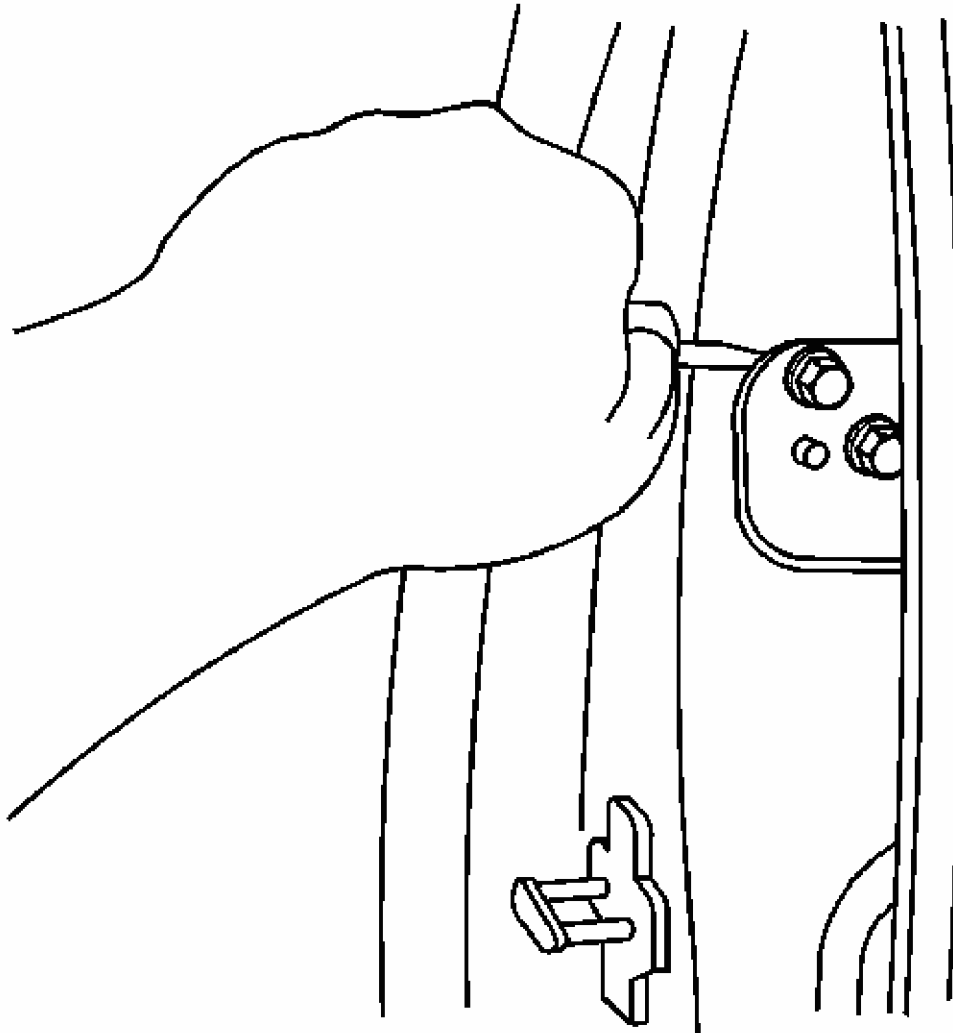


Fig. 51: Adjusting Door For Up Or Down Movement
Courtesy of GENERAL MOTORS CORP.

3. Adjust for a limited up or down movement at the body side hinge attachments.

NOTE: Refer to **FASTENER NOTICE** in Cautions and Notices.

4. Position the door fore or aft at the body hinge pillar attachment. Perform the following steps as needed:
 1. Loosen the fasteners.
 2. Reposition the door.

3. Tighten the fasteners.

Tighten: Tighten the fasteners to 34 N.m (25 lb ft).

5. Adjust the lock striker. Refer to **Door Lock Striker Adjustment**.
6. If more adjustment is needed, remove the door.
7. Remove the hinges from the pillar and the door.
8. Ream the stud holes in the pillar side of the hinges in order to allow for more adjustment.
9. Reinstall the hinges to the pillar and the door. Leave the nuts on the pillar side of the hinge loose.
10. Align the door as needed.
11. Position the door fore or aft at the body hinge pillar attachment. Perform the following steps as needed:
 1. Loosen the fasteners.
 2. Reposition the door.
 3. Tighten the fasteners.

Tighten: Tighten the fasteners to 34 N.m (25 lb ft).

FRONT SIDE DOOR REPLACEMENT

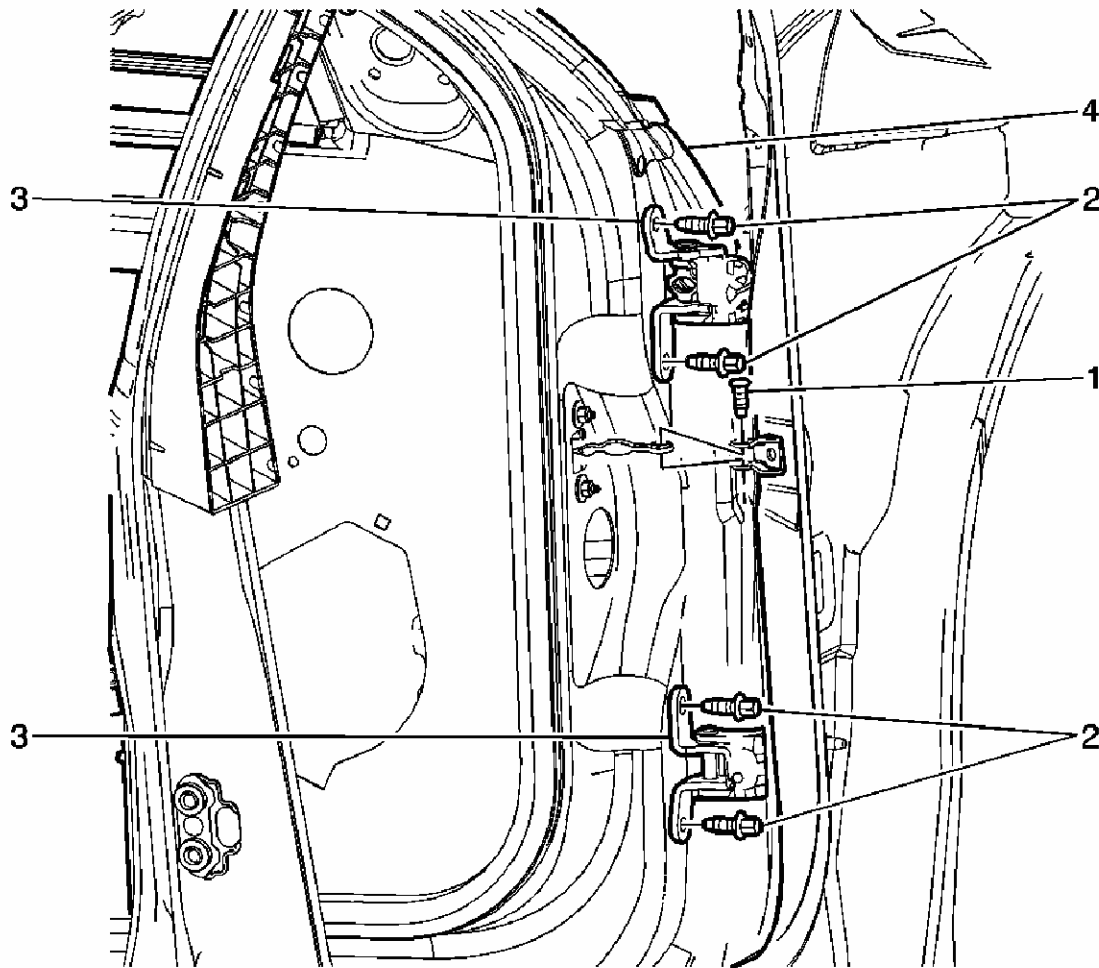


Fig. 52: Identifying Front Side Door Bolts
 Courtesy of GENERAL MOTORS CORP.

Front Side Door Replacement

Callout	Component Name
NOTE: Refer to <u>Fastener Notice</u> .	
Fastener Tightening Specifications: Refer to <u>Fastener Tightening Specifications</u> .	
1	Door Check Link Pin
2	Bolt, Front Side Door Hinge (Qty: 4) Tip: <ul style="list-style-type: none"> • Support the door before removing the hinge bolts. • Disconnect the door electrical connector. Tighten: 34 N.m (25 lb ft)

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

3	Front Side Door Outer Hinge (Qty: 2)
4	Door Assembly, Front Side Tip: When replacing the door it is necessary to transfer all of the internal components.

REAR DOOR REPLACEMENT

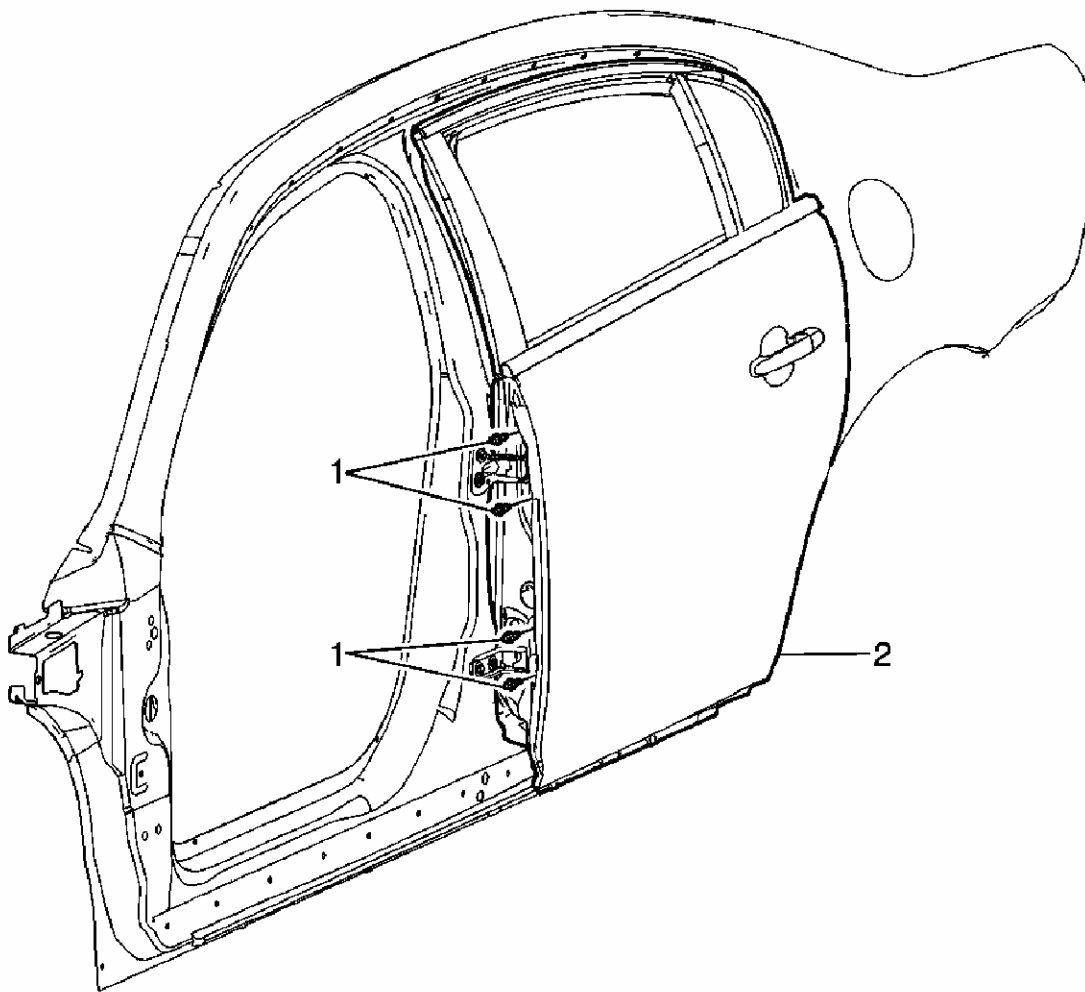


Fig. 53: View Of Rear Side Door & Mounting Bolts
Courtesy of GENERAL MOTORS CORP.

Rear Door Replacement

Callout	Component Name
NOTE: Refer to <u>Fastener Notice</u> .	
Fastener Tightening Specifications: Refer to <u>Fastener Tightening Specifications</u> .	
	Rear Door Hinge Bolts (Qty: 4)

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

1	<p>Tip:</p> <ul style="list-style-type: none">• Support the door before removing the hinge bolts.• Disconnect the door electrical connector. <p>Tighten: 34 N.m (25 lb ft)</p>
2	<p>Rear Door Assembly</p> <p>Tip: When replacing the door it is necessary to transfer all of the internal components.</p>

FRONT SIDE DOOR HINGE REPLACEMENT

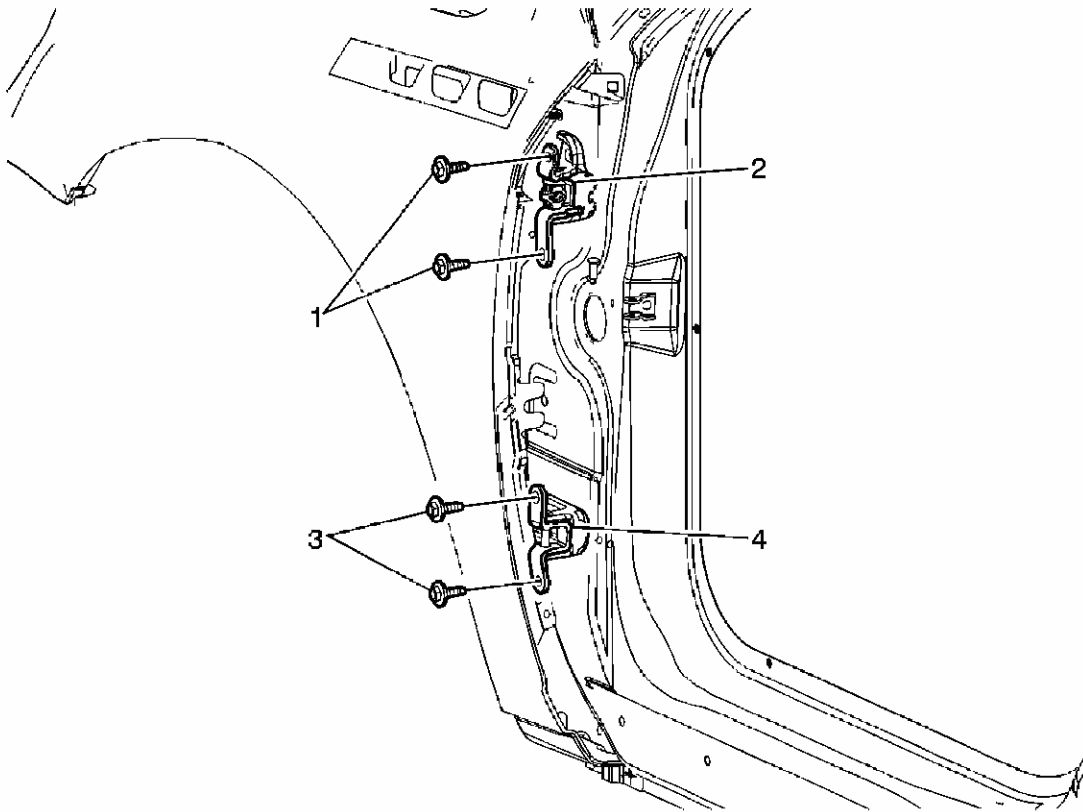


Fig. 54: Identifying Front Side Door Hinge Bolts
Courtesy of GENERAL MOTORS CORP.

Front Side Door Hinge Replacement

Callout	Component Name
<p>NOTE: Refer to <u>Fastener Notice</u> .</p> <p>Fastener Tightening Specifications: Refer to <u>Fastener Tightening Specifications</u>. Preliminary Procedure: Remove the front door. Refer to Front Side</p>	

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

Door Replacement.

1	Upper Hinge Bolts (Qty: 2) Tighten: 34 N.m (25 lb ft)
2	Upper Hinge Tip: With a grease pencil mark the position of the hinge.
3	Lower Hinge Bolts (Qty: 2) Tighten: 34 N.m (25 lb ft)
4	Lower Hinge Tip: With a grease pencil mark the position of the hinge.

REAR SIDE DOOR HINGE REPLACEMENT

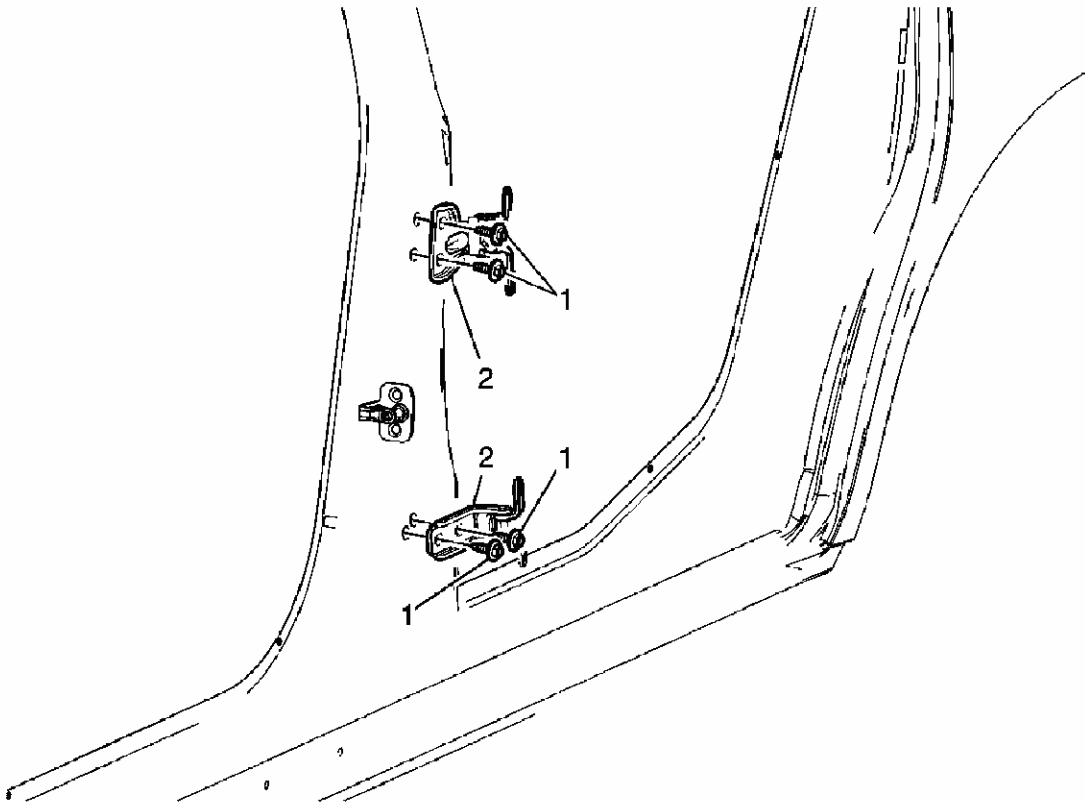


Fig. 55: Identifying Rear Side Door Hinge Bolts
Courtesy of GENERAL MOTORS CORP.

Rear Side Door Hinge Replacement

Callout	Component Name
NOTE: Refer to <u>Fastener Notice</u> .	

Fastener Tightening Specifications: Refer to **Fastener Tightening Specifications**. **Preliminary Procedure:** Remove the rear door. Refer to **Rear Door Replacement**.

1	Rear Door Hinge Bolts (Qty: 4) Tighten: 34 N.m (25 lb ft)
2	Rear Door Hinges (Qty: 2)

DOOR CHECK LINK REPLACEMENT

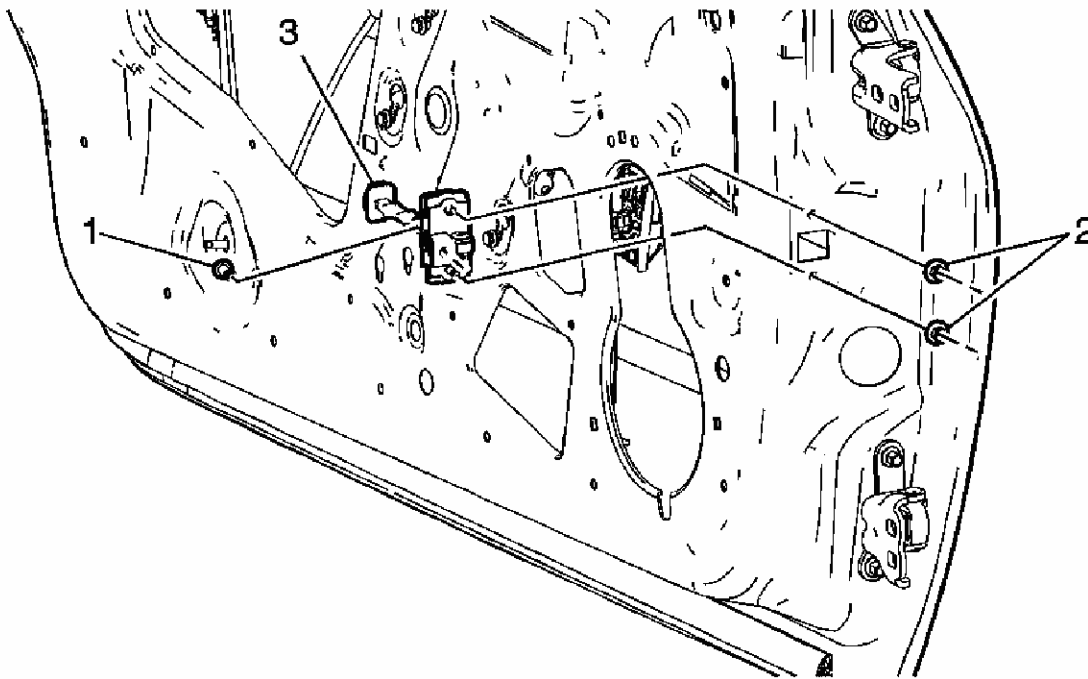


Fig. 56: Identifying Check Link & Bolts
Courtesy of GENERAL MOTORS CORP.

Door Check Link Replacement

Callout	Component Name
Preliminary Procedure: Remove the front door trim panel. Refer to <u>Front Side Door Trim Panel Replacement</u> .	
1	Front Door Check Link Pin
2	Front Door Lock Check Link Nuts (Qty: 2) NOTE: Refer to <u>Fastener Notice</u> .

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

	Tighten: 10 N.m (89 lb in)
3	Front Door Check Link

FRONT SIDE DOOR OUTSIDE HANDLE REPLACEMENT

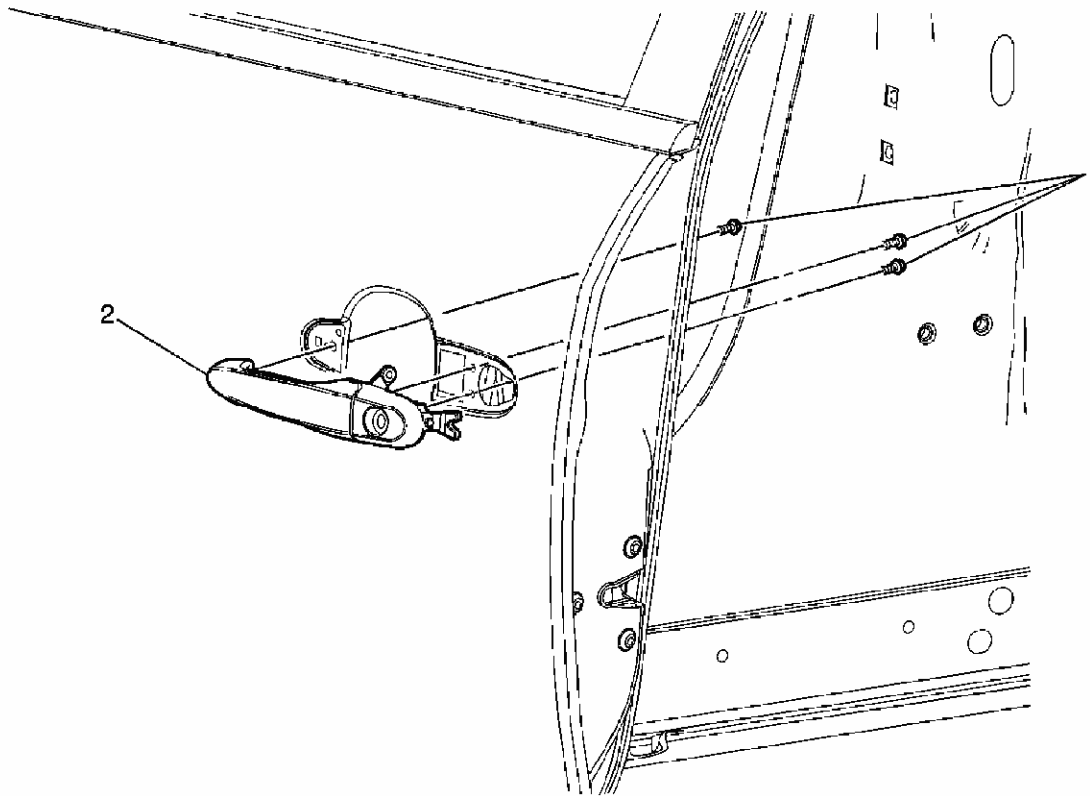


Fig. 57: View Of Front Side Door Outside Handle
Courtesy of GENERAL MOTORS CORP.

Front Side Door Outside Handle Replacement

Callout	Component Name
NOTE: Refer to <u>Fastener Notice</u> .	
Fastener Tightening Specifications: Refer to <u>Fastener Tightening Specifications</u> . Preliminary Procedure: Remove the front door trim pad. Window must be in the full up position before trim is removed. Refer to <u>Front Side Door Trim Panel Replacement</u> .	
1	Front Door Outside Handle Screws (Qty: 3) Tip: Reposition lock rod grommet and front side door insulator to access holes to door handle bolts. Tighten: 7 N.m (62 lb in)

Front Door Outside Handle

2

Tip:

- Plastic clips hold in end of handle, they are easily broken.
- Pull handle out, away from door and then disconnect lock rod.

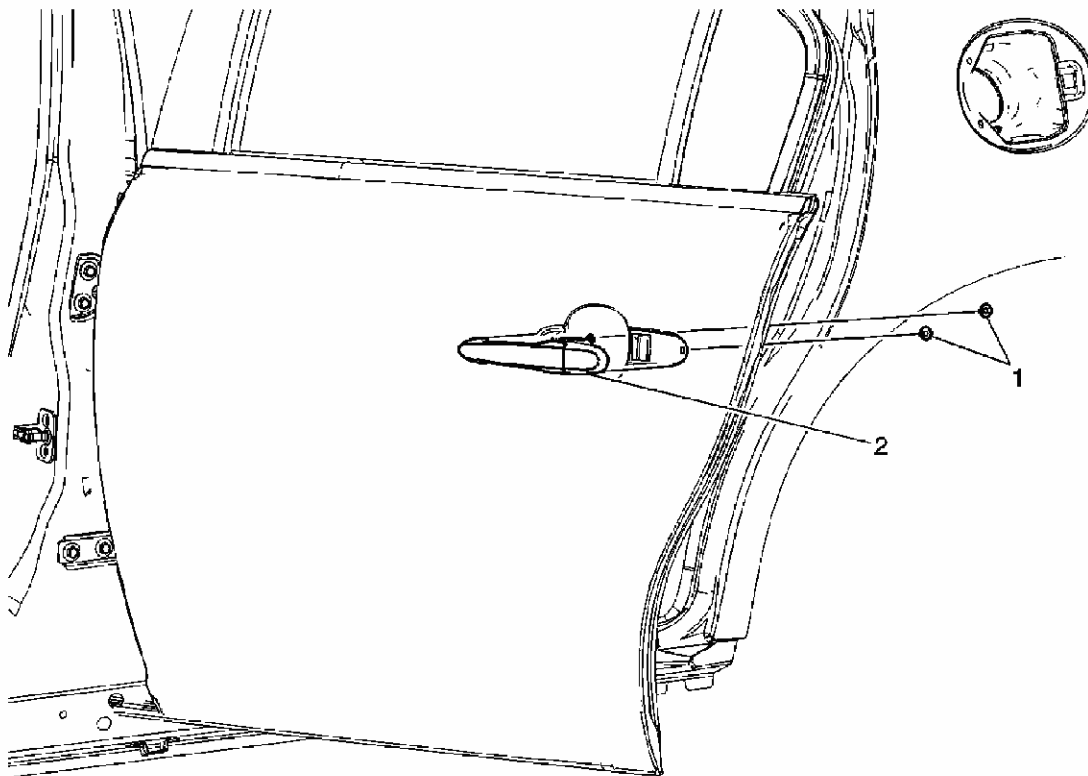
REAR SIDE DOOR OUTSIDE HANDLE REPLACEMENT

Fig. 58: View Of Rear Side Door Outside Handle
 Courtesy of GENERAL MOTORS CORP.

Rear Side Door Outside Handle Replacement

Callout	Component Name
<p>NOTE: Refer to <u>Fastener Notice</u> .</p> <p>Fastener Tightening Specifications: Refer to <u>Fastener Tightening Specifications</u>.</p> <p>Preliminary Procedure</p> <ol style="list-style-type: none"> 1. Position the window approximately halfway down in the door. 2. Remove trim panel. Refer to Rear Side Door Trim Panel Replacement. 	

3. Remove water deflector. Refer to **Rear Side Door Water Deflector Replacement**.

1	Rear Door Outside Handle Bolts (Qty: 2) Tighten: 7 N.m (62 lb in)
2	Rear Door Outside Handle Tip: Disconnect the lock rod.

FRONT SIDE DOOR INSIDE HANDLE REPLACEMENT

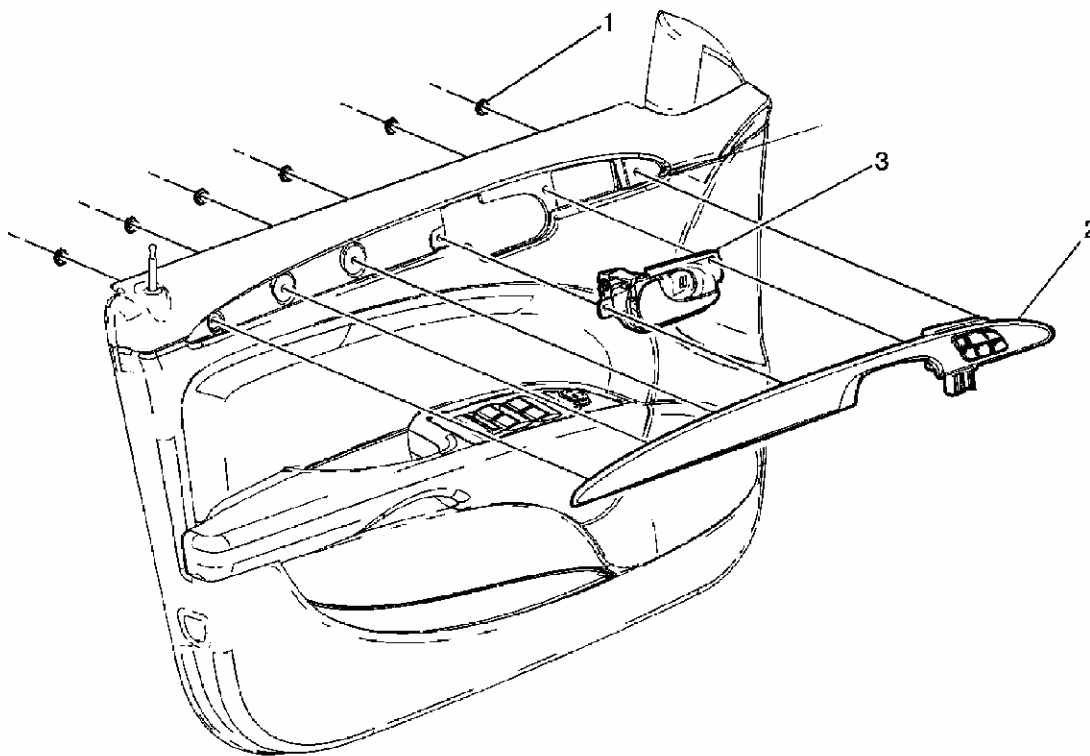


Fig. 59: View Of Front Side Door Inside Handle
Courtesy of GENERAL MOTORS CORP.

Front Side Door Inside Handle Replacement

Callout	Component Name
NOTE: Refer to <u>Fastener Notice</u> .	
Fastener Tightening Specifications: Refer to <u>Fastener Tightening Specifications</u> . Preliminary Procedure: Remove the door trim panel. Refer to <u>Front Side Door Trim Panel Replacement</u> .	
	Front Side Door Applique Nut (Qty: 6)

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

1	Tighten: 2 N.m (18 lb in)
2	Front Side Door Applique Tip: Disconnect the electrical connector.
3	Front Side Door Inside Handle Assembly Tip: Disconnect the inside handle cable from the handle assembly.

REAR SIDE DOOR INSIDE HANDLE REPLACEMENT

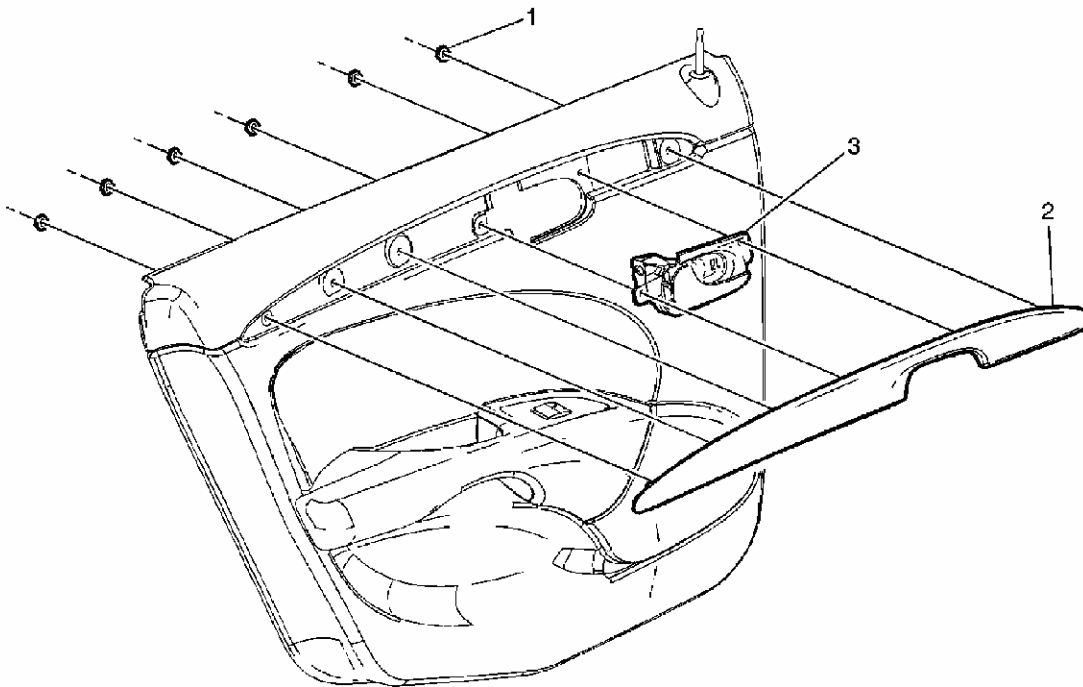


Fig. 60: View Of Rear Side Door Inside Handle
Courtesy of GENERAL MOTORS CORP.

Rear Side Door Inside Handle Replacement

Callout	Component Name
NOTE: Refer to <u>Fastener Notice</u> .	
Fastener Tightening Specifications: Refer to <u>Fastener Tightening Specifications</u> . Preliminary Procedure: Remove the door trim panel. Refer to <u>Rear Side Door Trim Panel Replacement</u> .	
1	Rear Side Door Applique Nut (Qty: 6) Tighten: 2 N.m (18 lb in)
2	Rear Side Door Applique Tip: Disconnect the electrical connector.

3

Rear Side Door Inside Handle Assembly

Tip: Disconnect the inside handle cable from the handle assembly.

FRONT SIDE DOOR LOCK REPLACEMENT

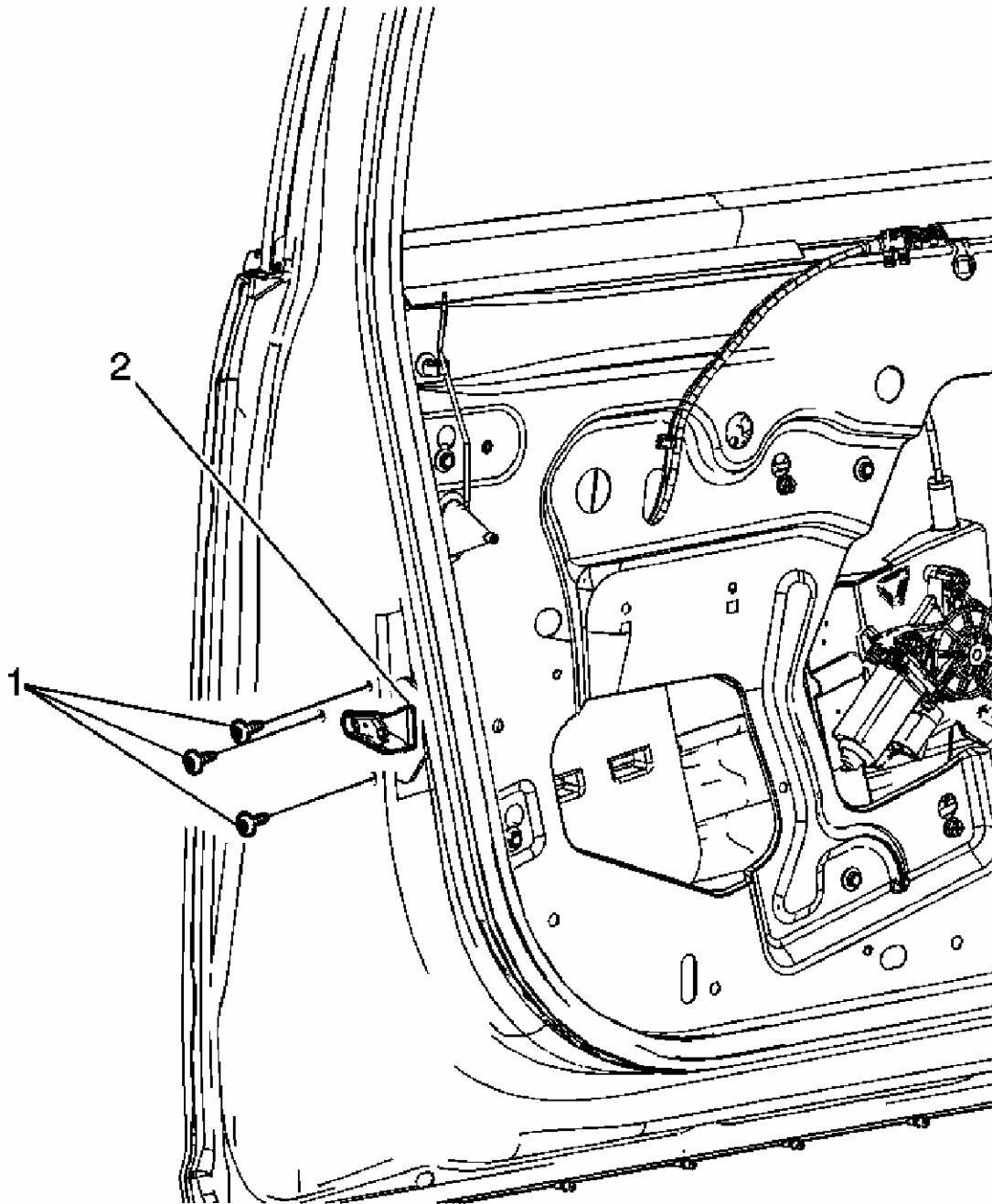


Fig. 61: Removing/Installing Front Side Door Lock
 Courtesy of GENERAL MOTORS CORP.

Front Side Door Lock Replacement

Callout	Component Name
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Preliminary Procedure:

Remove the water deflector. Refer to Front Side Door Water Deflector Replacement.

1	Front Door Lock Screw (Qty: 3) NOTE: Refer to <u>Fastener Notice</u> . Tighten: 10 N.m (89 lb in)
2	Front Door Lock Tip: <ul style="list-style-type: none">• Disconnect the lock rod.• Disconnect the lock cable.• Disconnect the electrical connector.• Disconnect the rod to handle.

REAR SIDE DOOR LOCK REPLACEMENT

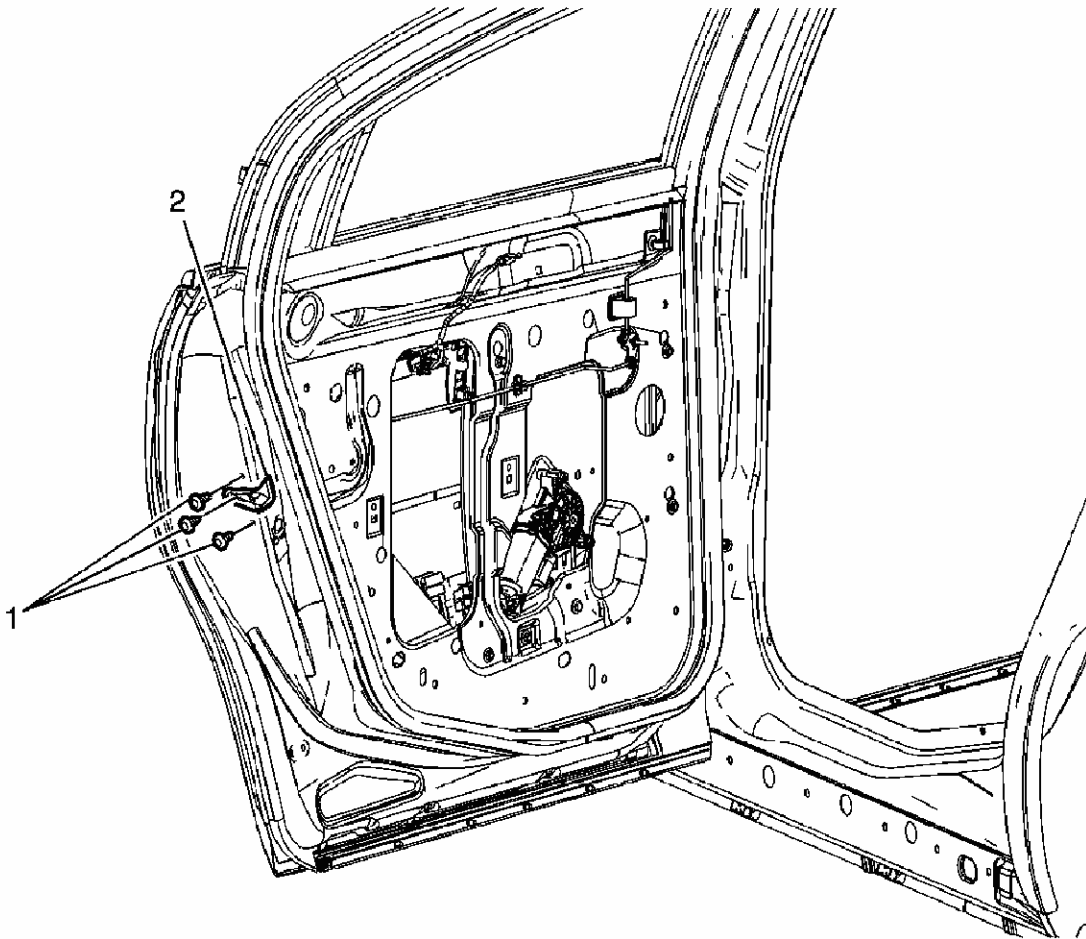


Fig. 62: Removing/Installing Rear Side Door Lock
 Courtesy of GENERAL MOTORS CORP.

Rear Side Door Lock Replacement

Callout	Component Name
Preliminary Procedure: Remove the water deflector. Refer to Rear Side Door Water Deflector Replacement .	
1	Rear Door Lock Screw (Qty: 3) NOTE: Refer to Fastener Notice . Tighten: 10 N.m (89 lb in)
2	Rear Door Lock Tip: <ul style="list-style-type: none"> • Disconnect the lock rod. • Disconnect the lock cable.

- Disconnect the electrical connector.
- Disconnect the rod to handle.

DOOR LOCK CYLINDER REPLACEMENT

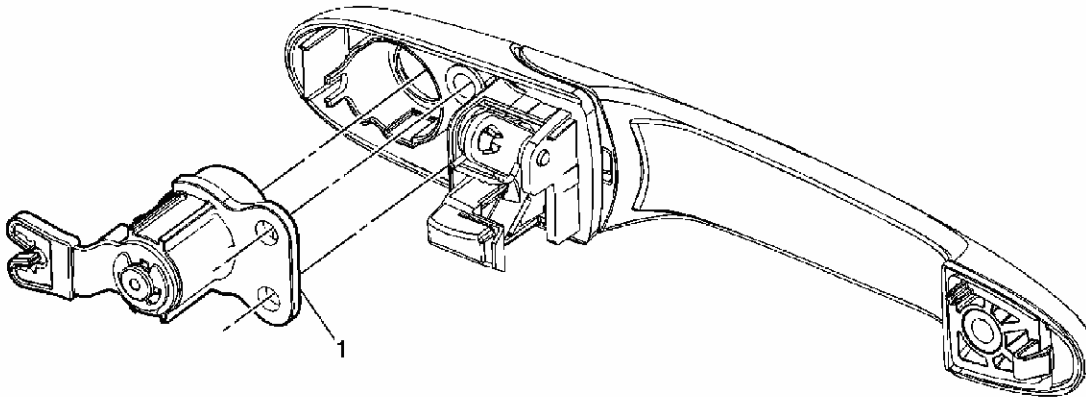


Fig. 63: Identifying Door Lock Cylinder
 Courtesy of GENERAL MOTORS CORP.

Door Lock Cylinder Replacement

Callout	Component Name
NOTE: Refer to <u>Fastener Notice</u> .	
Fastener Tightening Specifications: Refer to <u>Fastener Tightening Specifications</u> . Preliminary Procedure: Remove front door handle. Refer to <u>Front Side Door Outside Handle Replacement</u> .	
1	Front Door Lock Cylinder Tip: <ul style="list-style-type: none"> • Window must be in full up position. • Pull lock cylinder out, away from door and then unhook lock rod. • Lock cylinder will be separated from handle once the handle is removed from the door.

DOOR STRIKER REPLACEMENT

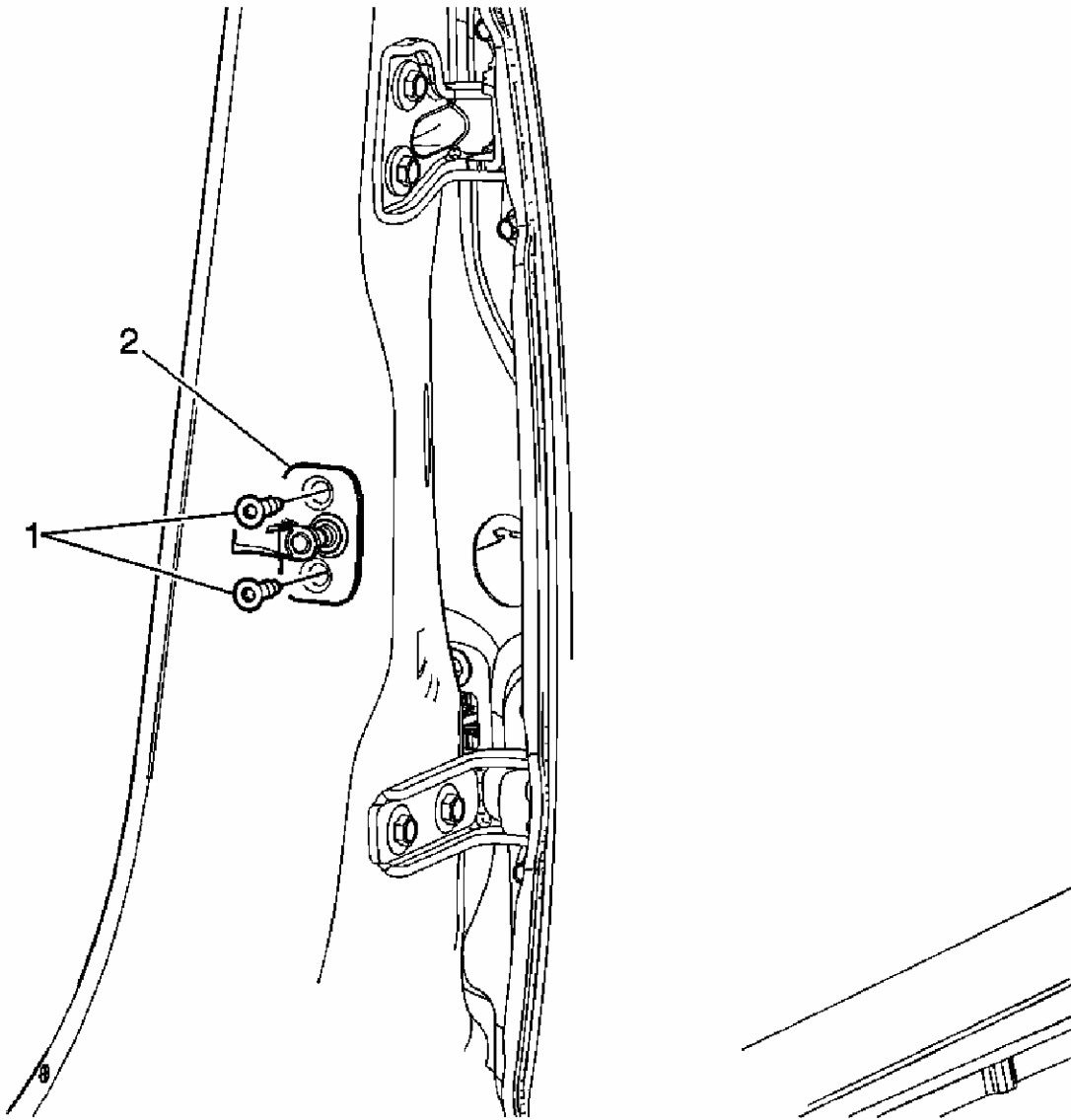


Fig. 64: Identifying Door Striker
 Courtesy of GENERAL MOTORS CORP.

Door Striker Replacement

Callout	Component Name
NOTE: Refer to <u>Fastener Notice</u> .	
Fastener Tightening Specifications: Refer to <u>Fastener Tightening Specifications</u> .	
1	Front Door Lock Striker Screws (Qty: 3) Tighten: 27 N.m (20 lb ft)
2	Front Door Lock Striker Tip: Adjust as necessary.

DOOR LOCK STRIKER ADJUSTMENT

Tools Required

J 39346-A Mini-Wedge Door Striker Aligner. See **Special Tools**.

Adjustment Procedure

IMPORTANT: Properly align the door before adjusting the striker.

1. Open the door.

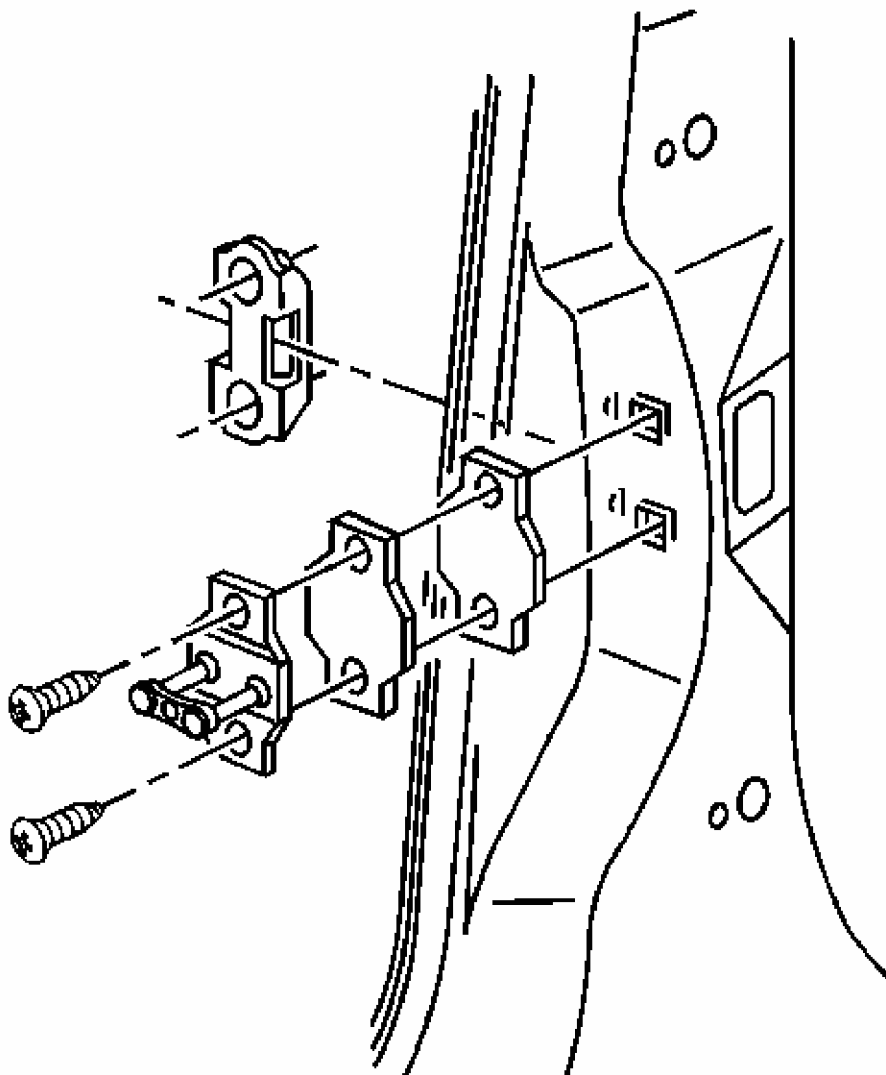


Fig. 65: View Of Lock Striker Components
Courtesy of GENERAL MOTORS CORP.

2. Loosen the door striker screws just enough to allow movement of the door striker.
3. Install the **J 39346-A** . See **Special Tools**.

IMPORTANT: Do not slam the door.

4. Close the door while holding the outside handle in the open position.
5. Open the door.

NOTE: Refer to Fastener Notice .

6. Tighten the door lock striker screws.

Tighten: Tighten the door striker screws to 25 N.m (18 lb ft).

7. Remove the **J 39346-A** . See **Special Tools**.
8. Close the door.

FRONT SIDE DOOR WINDOW REGULATOR REPLACEMENT

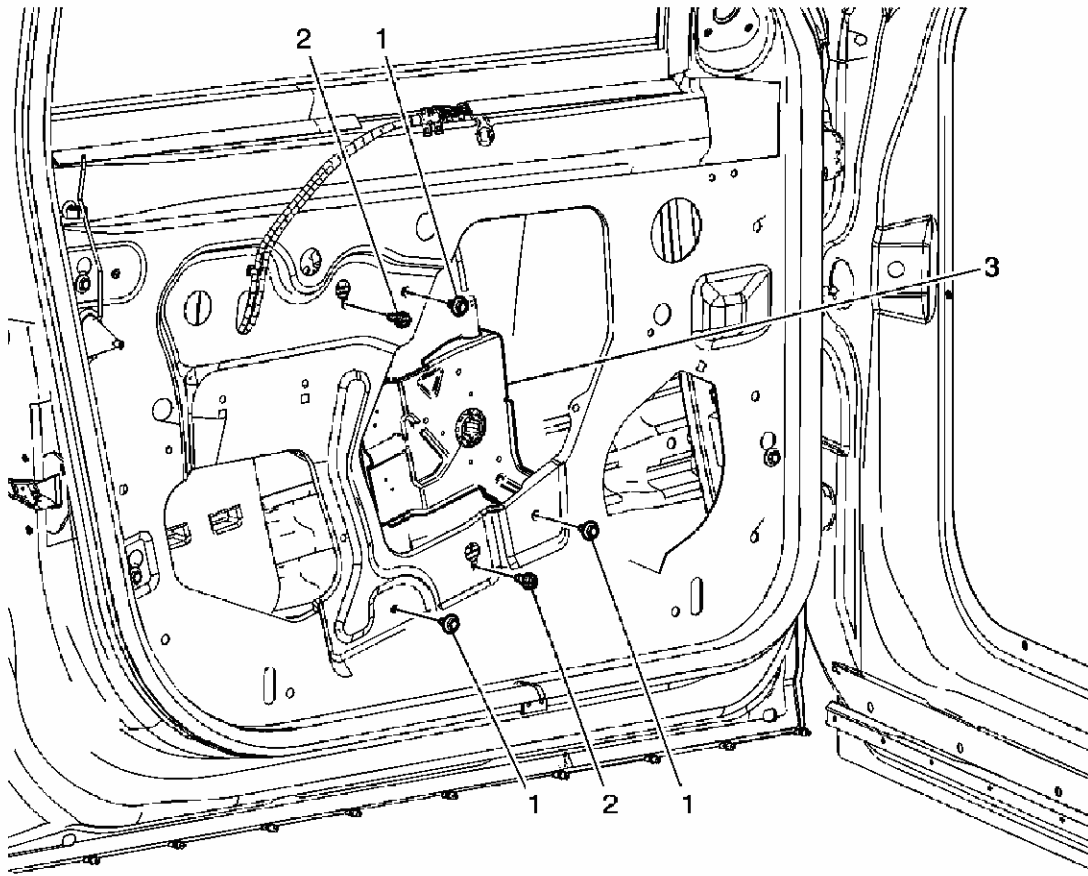


Fig. 66: View Of Front Side Door Window Regulator
Courtesy of GENERAL MOTORS CORP.

Front Side Door Window Regulator Replacement

Callout	Component Name
NOTE: Refer to <u>Fastener Notice</u> .	
Fastener Tightening Specifications: Refer to <u>Fastener Tightening Specifications</u> .	
Preliminary Procedure	
<ol style="list-style-type: none">1. Position the window approximately halfway down in the door.2. Remove the trim panel. Refer to <u>Front Side Door Trim Panel Replacement</u>.3. Remove the water deflector. Refer to <u>Front Side Door Water Deflector Replacement</u>.4. Remove the front door window. Refer to <u>Front Side Door Window Replacement</u>.	
	Front Door Window Regulator Bolts (Qty: 3)

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

1	Tighten: 10 N.m (89 lb in)
2	Front Door Window Regulator Screw (Qty: 2) Tighten: 10 N.m (89 lb in)
3	Front Door Window Regulator Tip: <ol style="list-style-type: none">1. Disconnect the electrical connector.2. Rotate the regulator as necessary to remove from the door.

REAR SIDE DOOR WINDOW REGULATOR REPLACEMENT

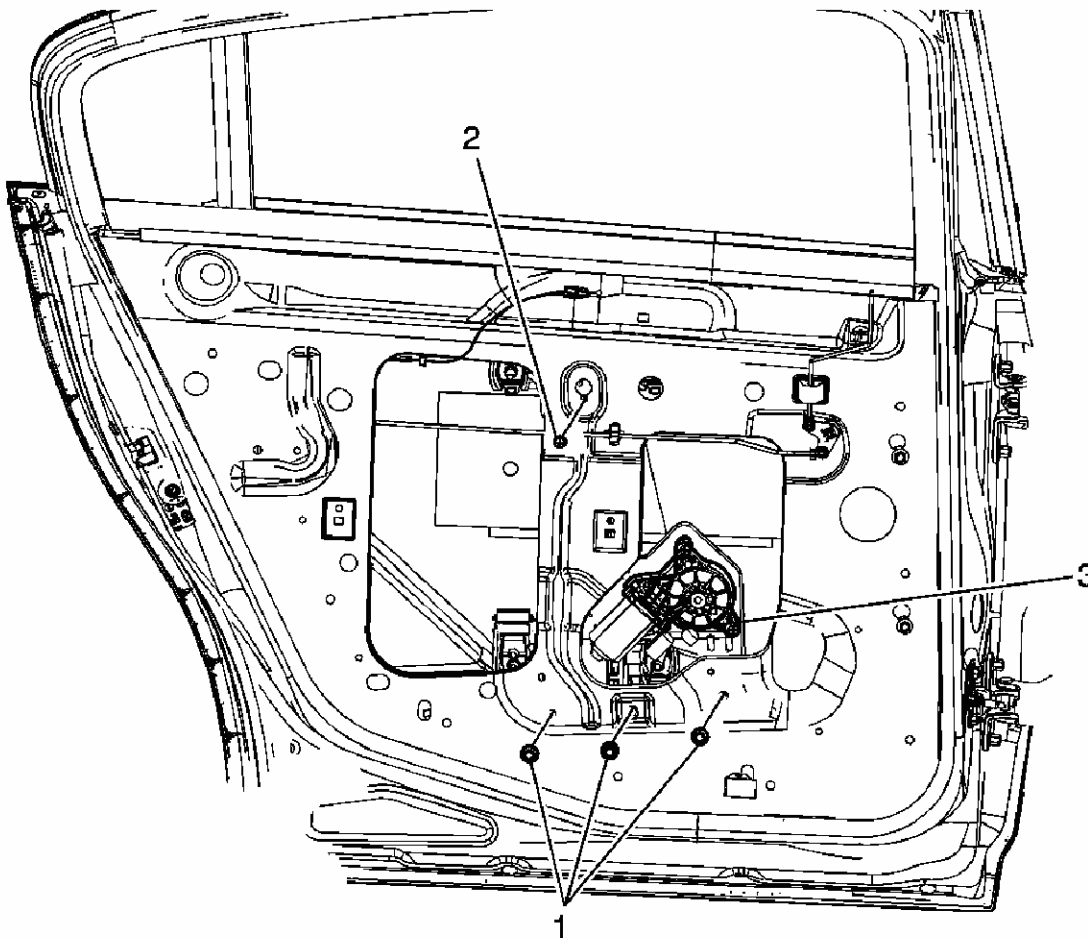


Fig. 67: View Of Rear Side Door Window Regulator
Courtesy of GENERAL MOTORS CORP.

Rear Side Door Window Regulator Replacement

Callout	Component Name
NOTE:	

Refer to Fastener Notice .

Fastener Tightening Specifications: Refer to Fastener Tightening Specifications.

Preliminary Procedure

1. Position the window approximately half way down in the door.
2. Remove the trim panel. Refer to Rear Side Door Trim Panel Replacement.
3. Remove the water deflector. Refer to Rear Side Door Water Deflector Replacement.
4. Remove the rear door window. Refer to Rear Side Door Window Replacement.

1	Rear Door Window Regulator Bolts (Qty: 3) Tighten: 10 N.m (89 lb in)
2	Rear Door Window Regulator Bolts (Qty: 2) Tighten: 10 N.m (89 lb in)
3	Rear Door Window Regulator Tip: <ol style="list-style-type: none">1. Disconnect the electrical connector.2. Rotate the regulator as necessary to remove from the door.

FRONT SIDE DOOR WINDOW REGULATOR MOTOR REPLACEMENT

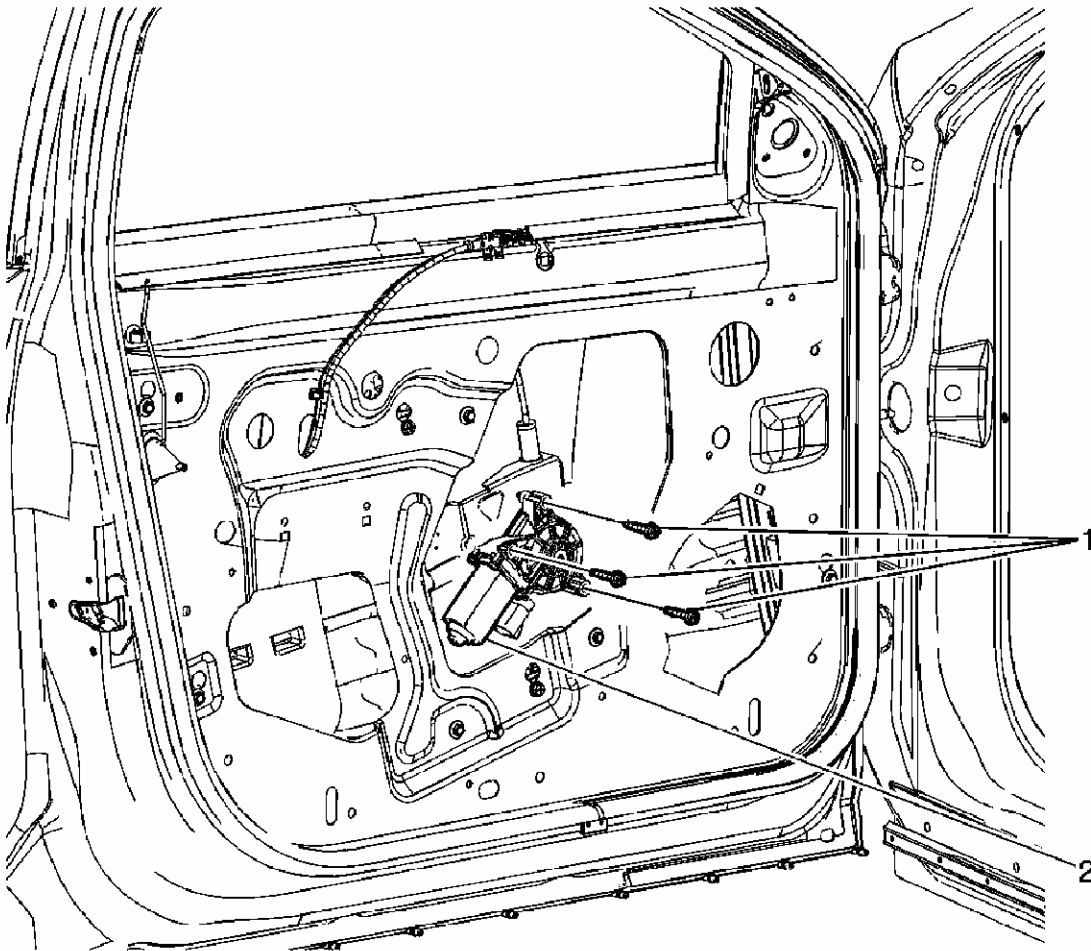


Fig. 68: Locating Front Side Door Window Regulator Motor Bolts
 Courtesy of GENERAL MOTORS CORP.

Front Side Door Window Regulator Motor Replacement

Callout	Component Name
NOTE: Refer to <u>Fastener Notice</u> .	
Fastener Tightening Specifications: Refer to <u>Fastener Tightening Specifications</u> .	
Preliminary Procedure	
1. Remove the trim panel. Refer to <u>Front Side Door Trim Panel Replacement</u> . 2. Remove the water deflector. Refer to <u>Front Side Door Water Deflector Replacement</u> .	
1	Front Door Window Motor Bolts (Qty: 3) Tighten: 4.6 N.m (41 lb in)

2

Front Door Window Motor

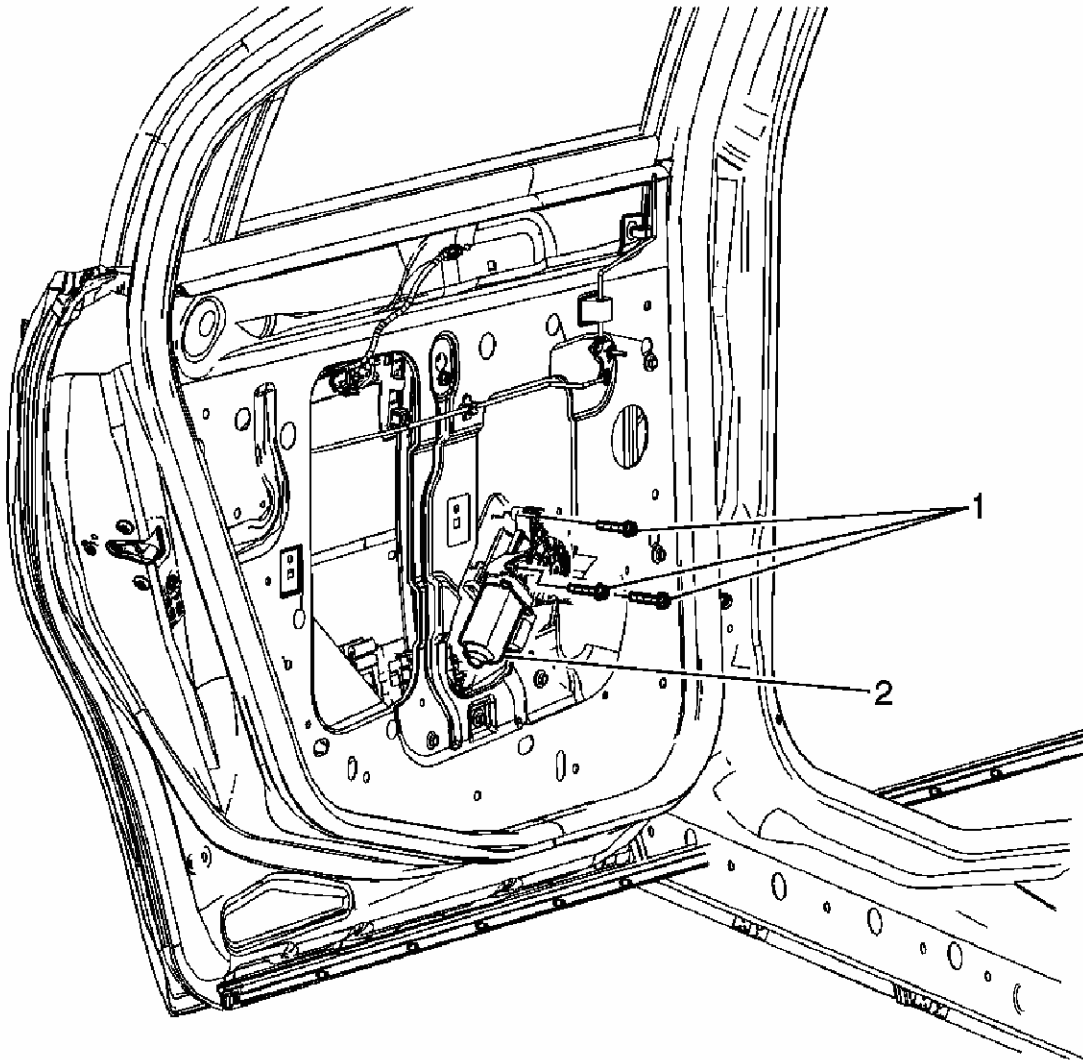
Tip: Disconnect the electrical connector.**REAR SIDE DOOR WINDOW REGULATOR MOTOR REPLACEMENT**

Fig. 69: Locating Rear Side Door Window Regulator Motor Bolts
Courtesy of **GENERAL MOTORS CORP.**

Rear Side Door Window Regulator Motor Replacement

Callout	Component Name
NOTE: Refer to <u>Fastener Notice</u> .	
Fastener Tightening Specifications: Refer to <u>Fastener Tightening Specifications</u> .	
Preliminary Procedure	

1. Remove the trim panel. Refer to Rear Side Door Trim Panel Replacement.
2. Remove the water deflector. Refer to Rear Side Door Water Deflector Replacement.

1	Rear Door Window Motor Bolts (Qty: 3) Tighten: 4.6 N.m (41 lb in)
2	Rear Door Window Motor Tip: Disconnect the electrical connector.

FRONT SIDE DOOR WINDOW REPLACEMENT

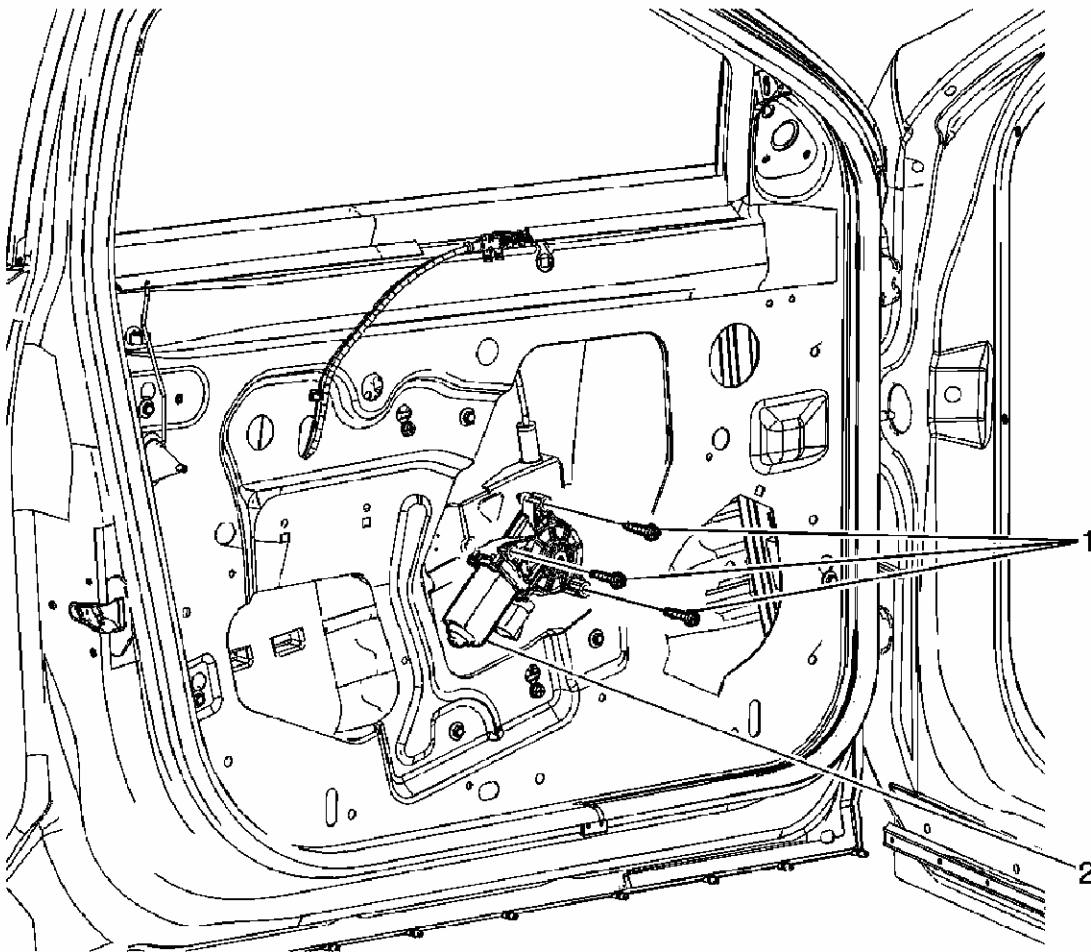


Fig. 70: Locating Front Side Door Window Regulator Motor Bolts
Courtesy of GENERAL MOTORS CORP.

Front Side Door Window Replacement

Callout	Component Name
NOTE:	

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

Refer to Fastener Notice .

Fastener Tightening Specifications: Refer to Fastener Tightening Specifications.

Preliminary Procedure

1. Remove the trim panel. Refer to Front Side Door Trim Panel Replacement.
2. Remove the water deflector. Refer to Rear Side Door Water Deflector Replacement.

1	Front Door Window Motor Bolts (Qty: 3) Tighten: 4.6 N.m (41 lb in)
2	Front Door Window Motor Tip: Disconnect the electrical connector.

REAR SIDE DOOR WINDOW REPLACEMENT

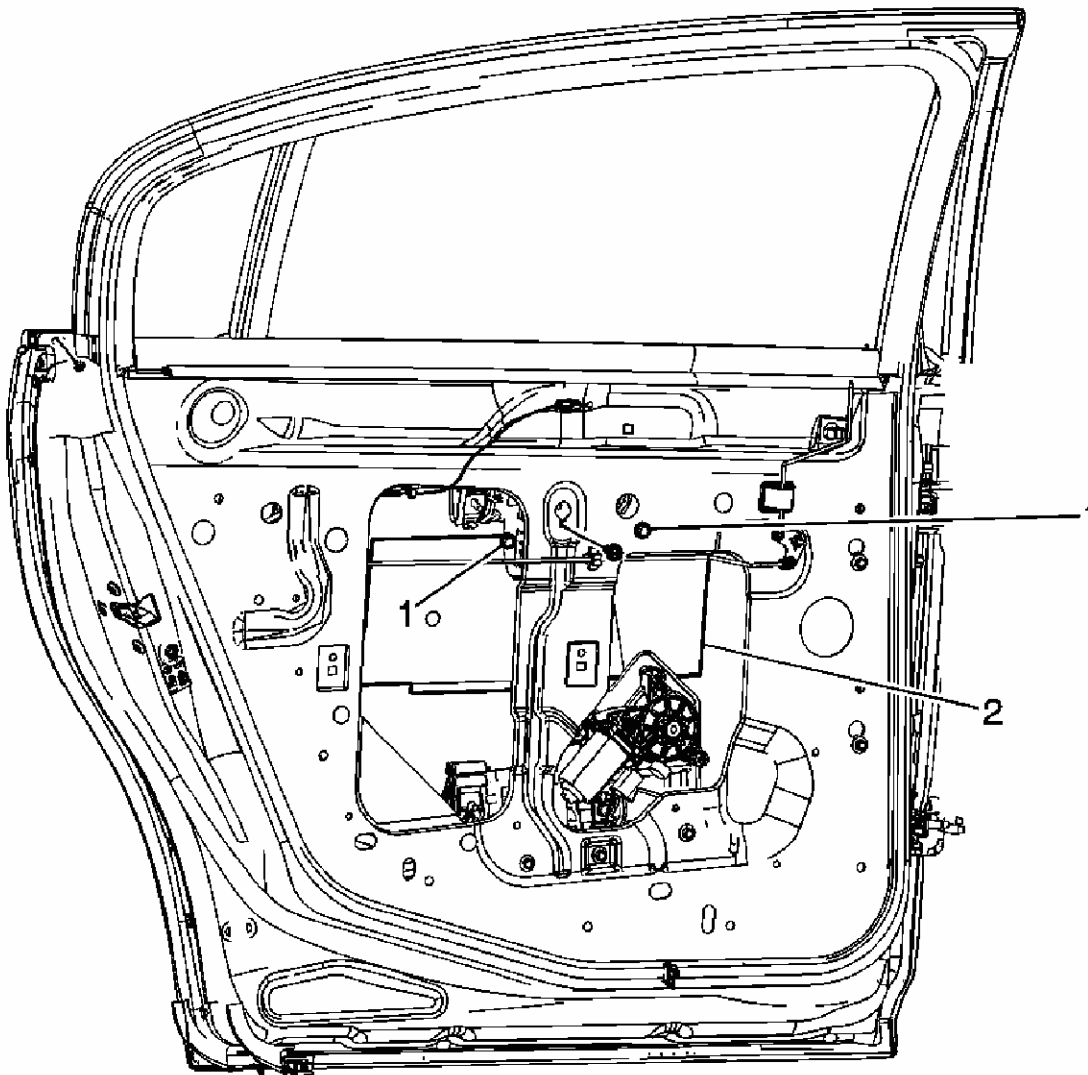


Fig. 71: Identifying Rear Side Door Window Mounting Bolts
Courtesy of GENERAL MOTORS CORP.

Rear Side Door Window Replacement

Callout	Component Name
Preliminary Procedure	
1. Remove the door frame applique. Refer to <u>Rear Door Frame Applique Replacement</u> .	
2. Position the window approximately halfway down in the door.	
3. Remove the trim panel. Refer to <u>Rear Side Door Trim Panel Replacement</u> .	
4. Remove the water deflector. Refer to <u>Rear Side Door Water Deflector Replacement</u> .	
	Rear Door Window Bolt (Qty: 2)

2006 Buick Lucerne CXS

2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

1	NOTE: Refer to <u>Fastener Notice</u> . Tighten: 10 N.m (89 lb in)
2	Rear Door Window Tip: Rotate window as necessary to remove it from the door.

REAR SIDE DOOR STATIONARY WINDOW AND FRONT CHANNEL REPLACEMENT

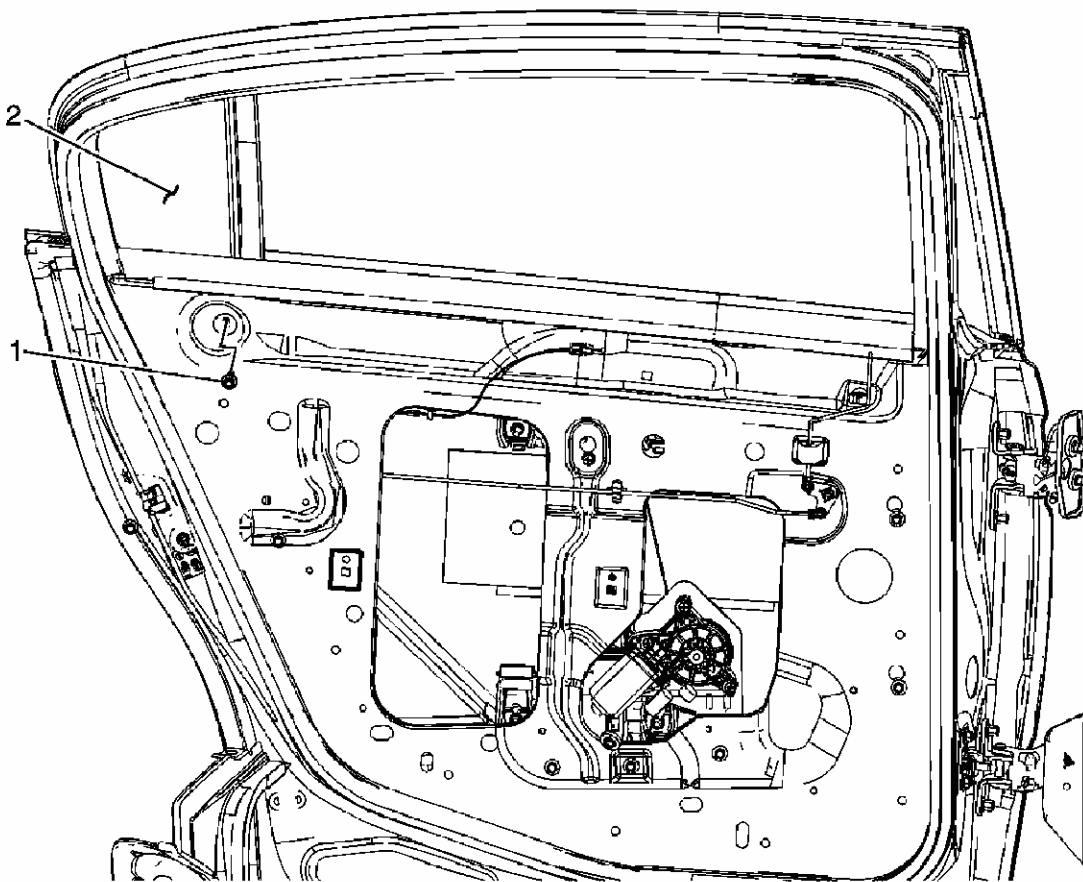


Fig. 72: View Of Rear Side Door Stationary Window & Front Channel
Courtesy of GENERAL MOTORS CORP.

Rear Side Door Stationary Window and Front Channel Replacement

Callout	Component Name
NOTE: Refer to <u>Fastener Notice</u> . Fastener Tightening Specifications: Refer to <u>Fastener Tightening Specifications</u> . Preliminary Procedure	

1. Position the window way down in the door.
2. Remove the trim panel. Refer to **Rear Side Door Trim Panel Replacement**.
3. Remove the water deflector. Refer to **Rear Side Door Water Deflector Replacement**.

1	Rear Door Stationary Window Bolt Tighten: 10 N.m (89 lb in)
2	Rear Door Stationary Window Tip: Rotate the window as necessary to remove it from the door.

REAR SIDE DOOR WINDOW FRONT CHANNEL REPLACEMENT

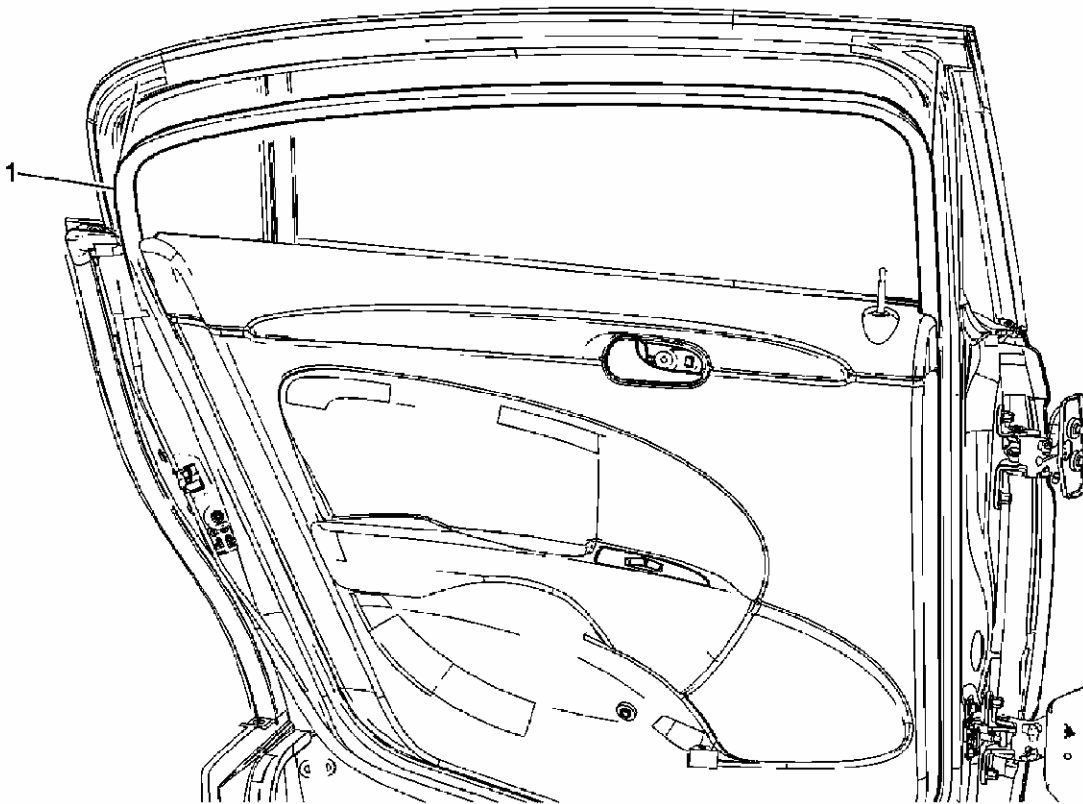


Fig. 73: View Of Rear Side Door Window Front Channel
Courtesy of GENERAL MOTORS CORP.

Rear Side Door Window Front Channel Replacement

Callout	Component Name
NOTE: Refer to <u>Fastener Notice</u> .	
Fastener Tightening Specifications: Refer to <u>Fastener Tightening Specifications</u> .	

1

Rear Door Upper Run Channel

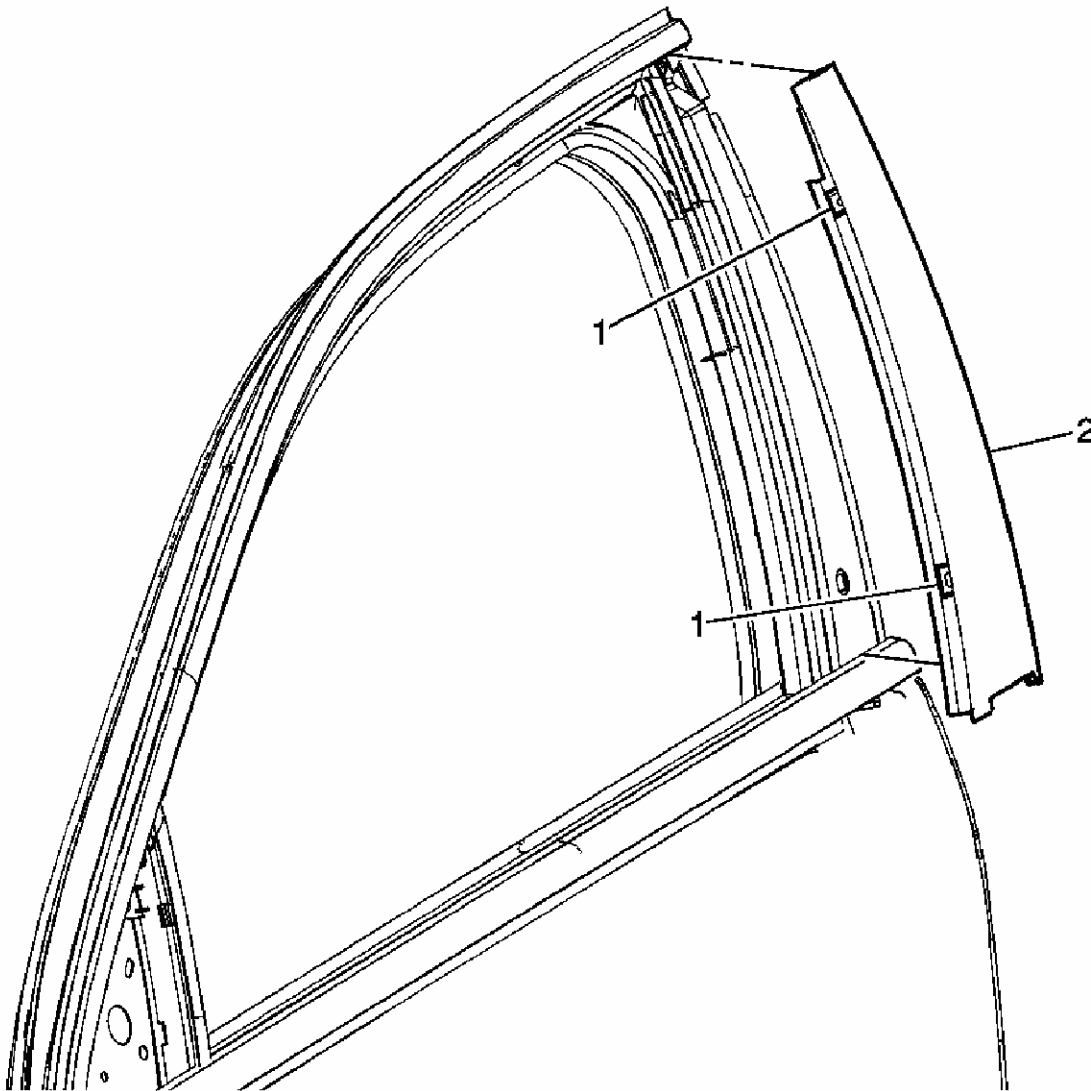
Tip: Use a small plastic flat-bladed tool to remove run channel.**FRONT DOOR FRAME APPLIQUE REPLACEMENT**

Fig. 74: Identifying Front Door Frame Applique
Courtesy of GENERAL MOTORS CORP.

Front Door Frame Applique Replacement

Callout	Component Name
NOTE: Refer to <u>Fastener Notice</u> .	
Fastener Tightening Specifications: Refer to <u>Fastener Tightening Specifications</u> . Preliminary Procedure: Position the window to the full down position.	

1	Front Door Frame Applique Rivets (Qty: 2) Tip: Disconnect upper run channel from applique to gain access to screws.
2	Front Door Frame Applique

REAR DOOR FRAME APPLIQUE REPLACEMENT

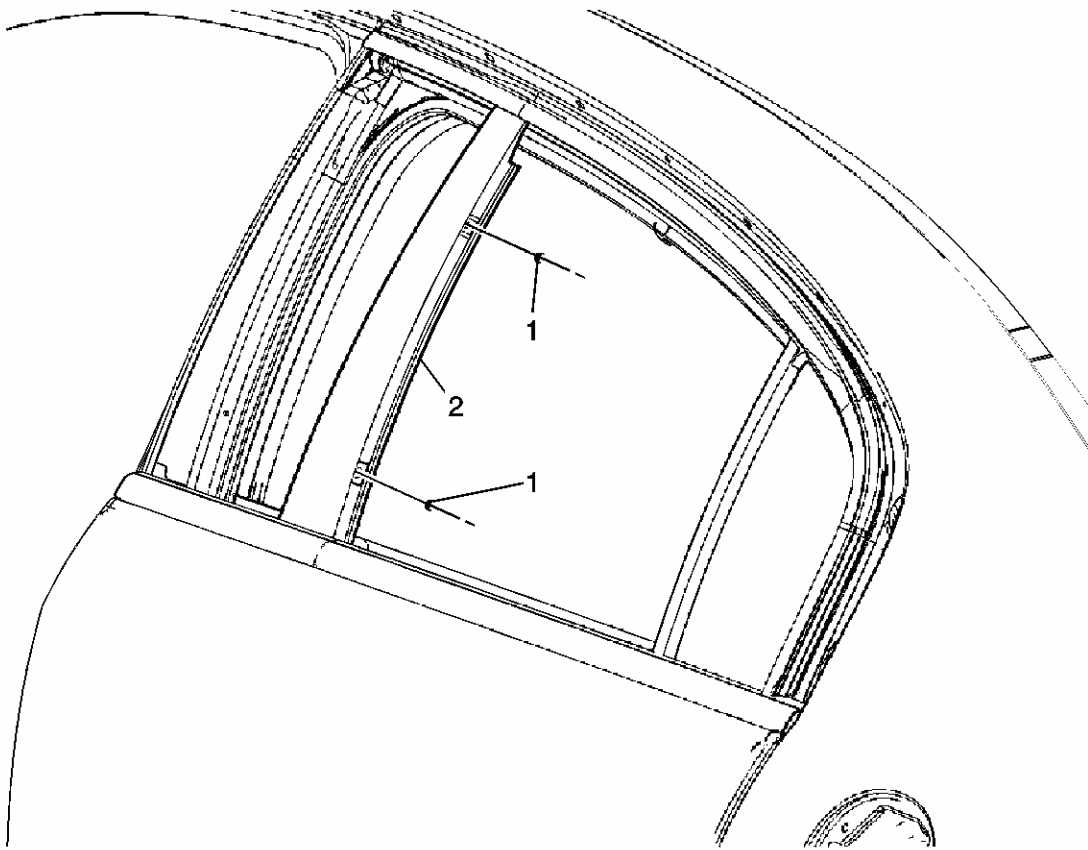


Fig. 75: Identifying Rear Door Frame Applique
Courtesy of GENERAL MOTORS CORP.

Rear Door Frame Applique Replacement

Callout	Component Name
Preliminary Procedure: Remove the window. Refer to <u>Rear Side Door Window Replacement</u> .	
1	Rear Door Frame Applique Screw (Qty: 2) NOTE: Refer to <u>Fastener Notice</u> . Tip: Disconnect upper run channel from applique to gain access to

	screws.
	Tighten: 10 N.m (89 lb in)
2	Rear Door Frame Applique

FRONT SIDE DOOR WINDOW BELT OUTER SEALING STRIP REPLACEMENT

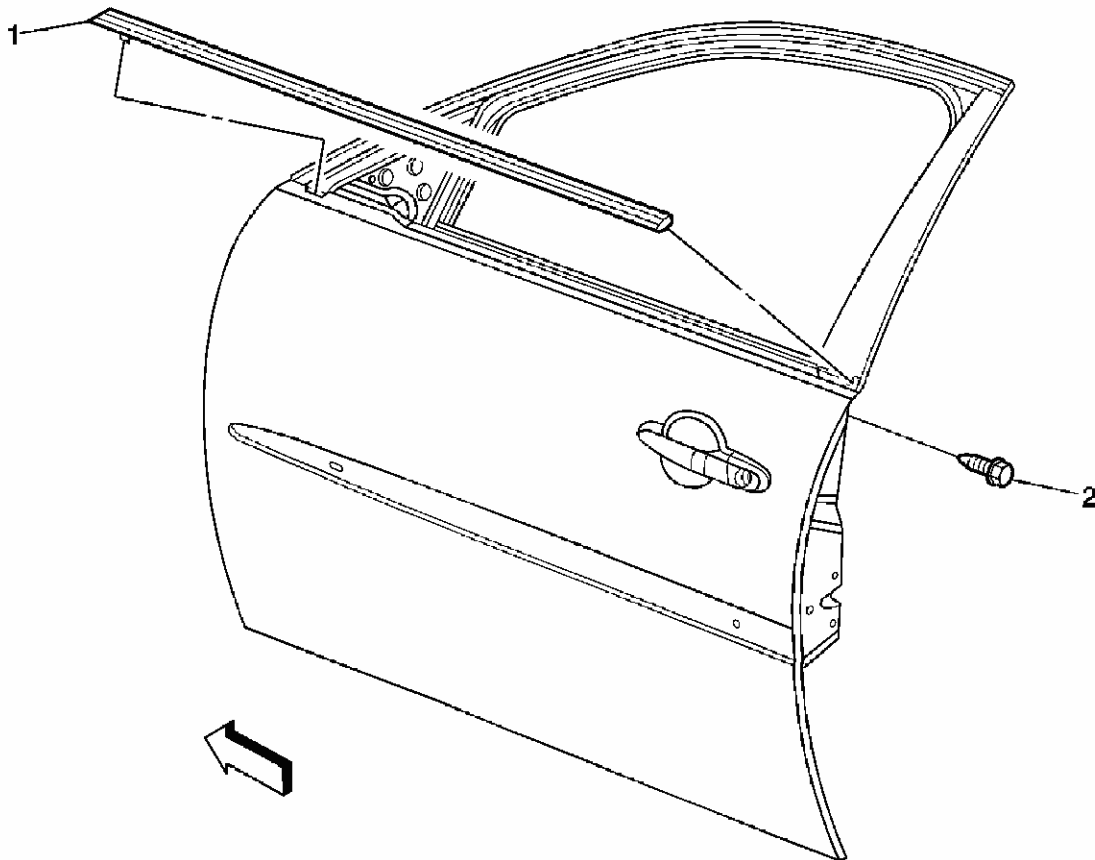


Fig. 76: Identifying Front Side Door Window Belt Outer Sealing Strip
Courtesy of GENERAL MOTORS CORP.

Front Side Door Window Belt Outer Sealing Strip Replacement

Callout	Component Name
1	Front Door Window Outside Belt Molding Screw (Qty: 2) NOTE: Refer to <u>Fastener Notice</u> . Tighten: 1.3 N.m (12 lb in)
2	Front Door Window Outside Belt Molding

REAR DOOR WINDOW BELT OUTER SEALING STRIP REPLACEMENT

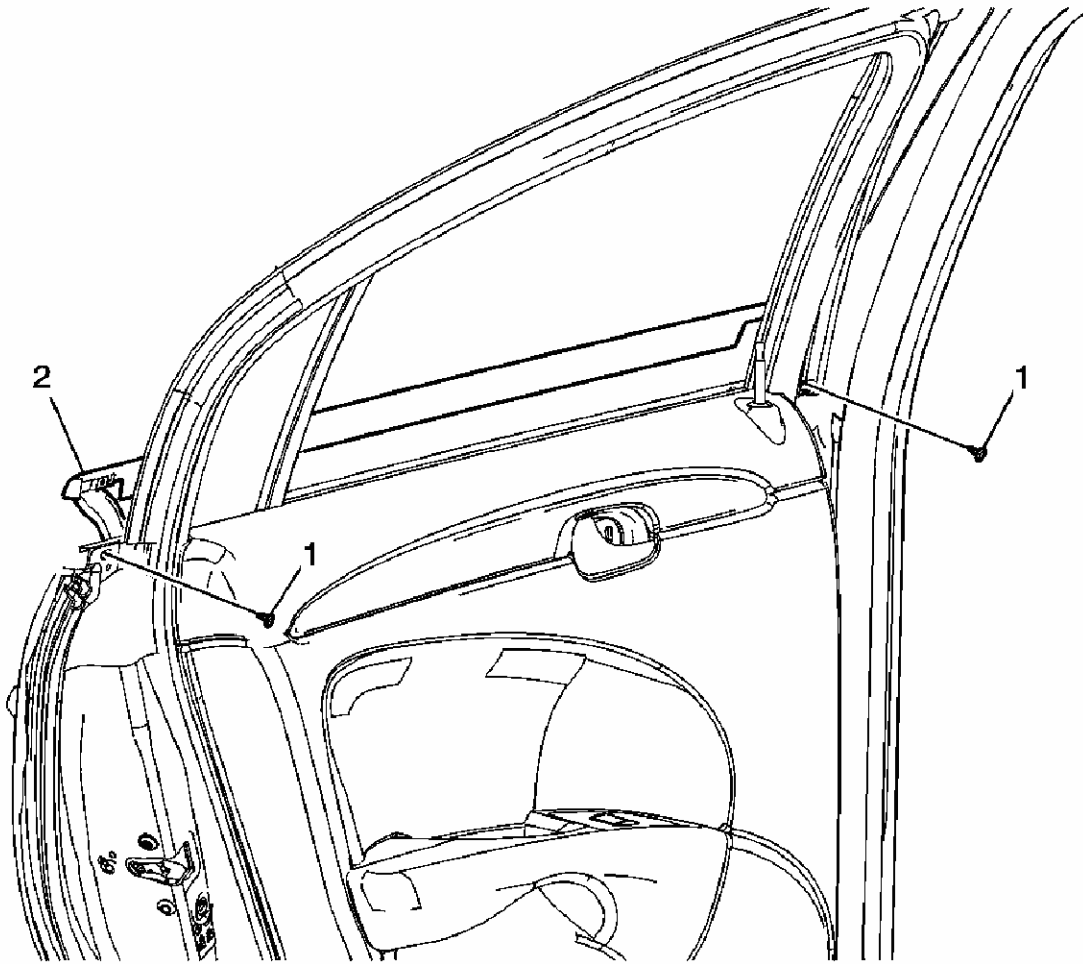


Fig. 77: Identifying Rear Side Door Window Belt Outer Sealing Strip
 Courtesy of GENERAL MOTORS CORP.

Rear Door Window Belt Outer Sealing Strip Replacement

Callout	Component Name
NOTE: Refer to <u>Fastener Notice</u> .	
Fastener Tightening Specifications: Refer to <u>Fastener Tightening Specifications</u> .	
1	Rear Door Window Outside Belt Molding Screws (Qty: 2) Tighten: 1.3 N.m (12 lb in)
2	Rear Door Window Outside Belt Molding

REAR SIDE DOOR BOTTOM AUXILIARY SEALING STRIP REPLACEMENT

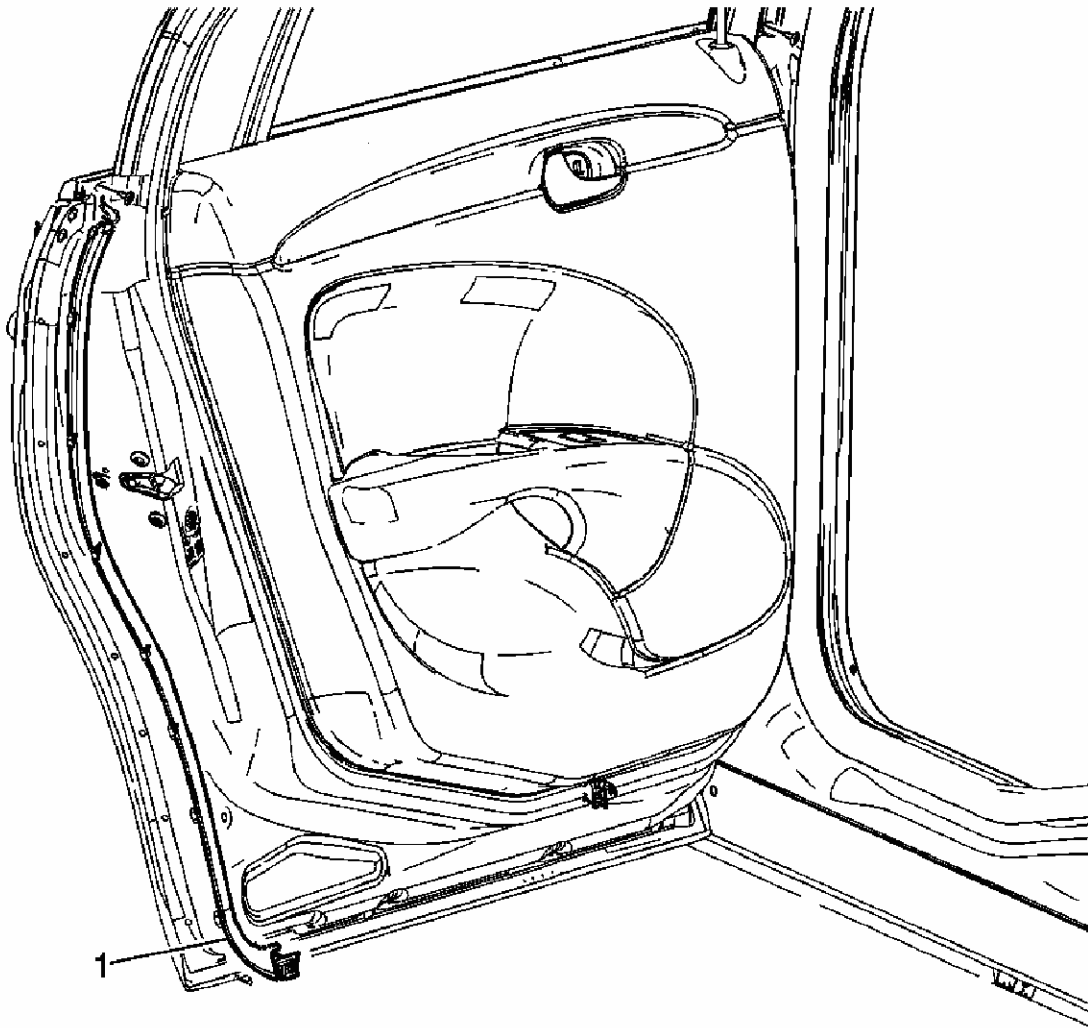


Fig. 78: Identifying Rear Side Door Bottom Auxiliary Sealing Strip
Courtesy of GENERAL MOTORS CORP.

Rear Side Door Bottom Auxiliary Sealing Strip Replacement

Callout	Component Name
NOTE: Refer to <u>Fastener Notice</u> .	
Fastener Tightening Specifications: Refer to <u>Fastener Tightening Specifications</u> .	
1	Rear Door Sealing Strip

FRONT DOOR OPENING WEATHERSTRIP REPLACEMENT

Removal Procedure

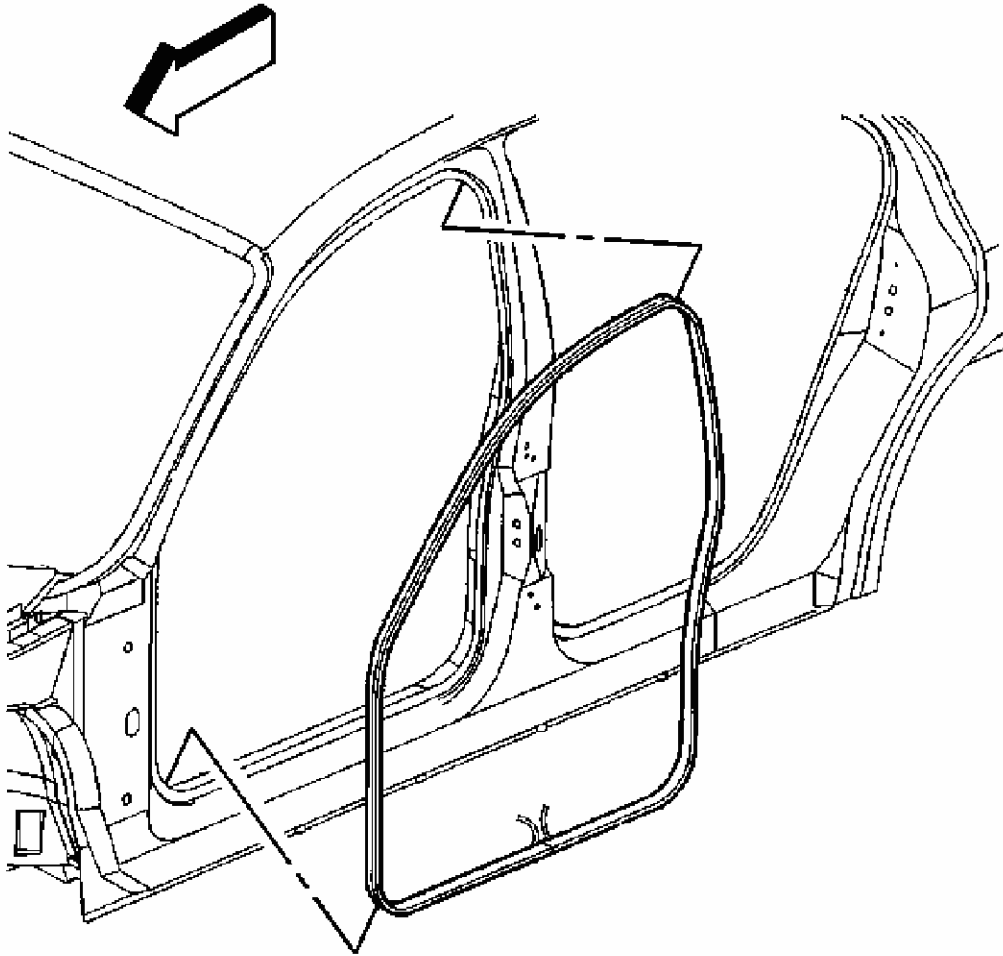


Fig. 79: View of Front Door Weatherstrip
Courtesy of GENERAL MOTORS CORP.

1. Remove the carpet retainer. Refer to **Rear Carpet Retainer Replacement** .
2. Start at the rear upper corner of the door opening and pull the weatherstrip away from the door opening flange.
3. Work around the door opening and remove the weatherstrip.

Installation Procedure

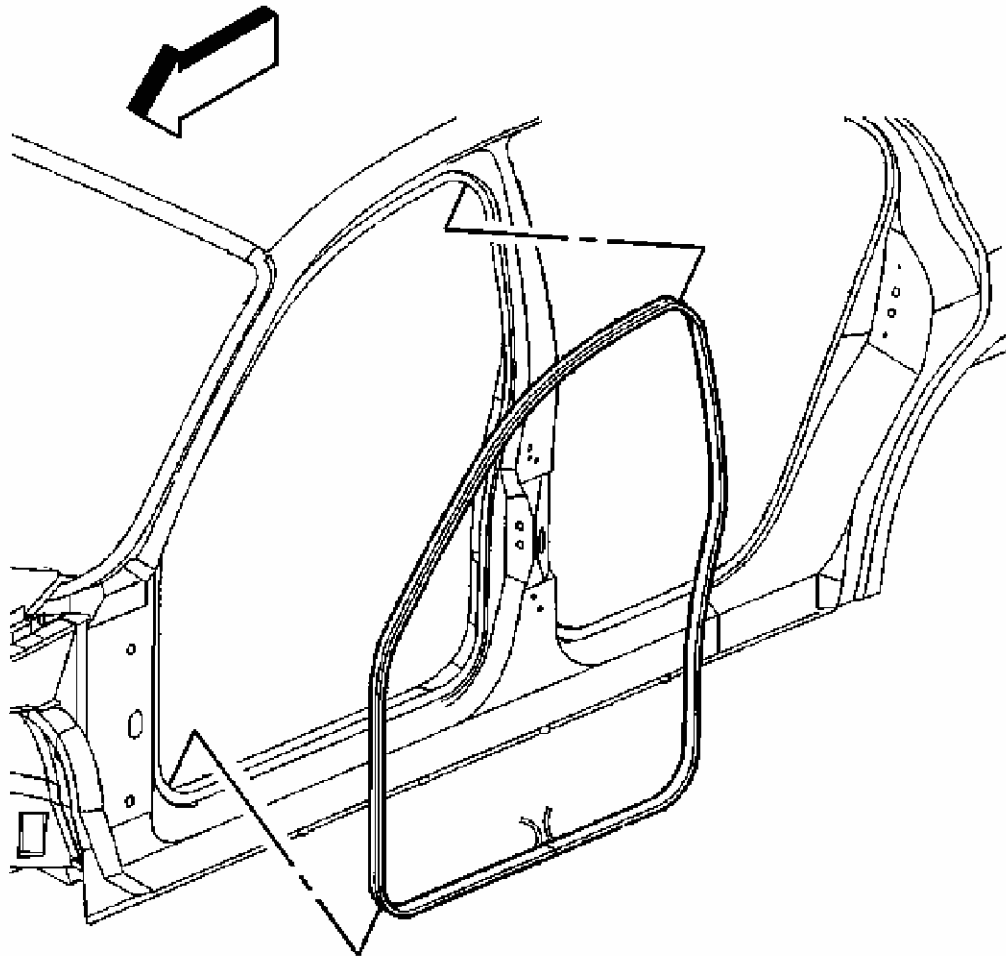


Fig. 80: View of Front Door Weatherstrip
Courtesy of GENERAL MOTORS CORP.

1. Position the paint dot in the upper corner of the center pillar.

IMPORTANT:

- One paint dot on the weatherstrip indicates the RH weatherstrip starting point.
 - Two paint dots on the weatherstrip indicates the LH weatherstrip starting point.
 - The rubber side of the weatherstrip should be outboard of the car.
2. Working downward along the rear edge, install the weatherstrip on the door opening flange ensuring that the carrier is fully seated in the corners.

3. From the center pillar working forward, install the weatherstrip along the roof rail and the window-pillar flange ensuring that the carrier is fully seated in the corners.
4. Using the palm of your hand or a rubber mallet, ensure that the weatherstrip is seated on the entire door opening flange.
5. Using a plastic trim stick or an equivalent, position the close-out lip over the interior trim around the door opening or use the ripcord, on new weatherstrip, under the close-out lip, in order to reposition the lip over the interior trim.
6. Install the carpet retainer. Refer to **Rear Carpet Retainer Replacement** .

REAR DOOR OPENING WEATHERSTRIP REPLACEMENT

Removal Procedure

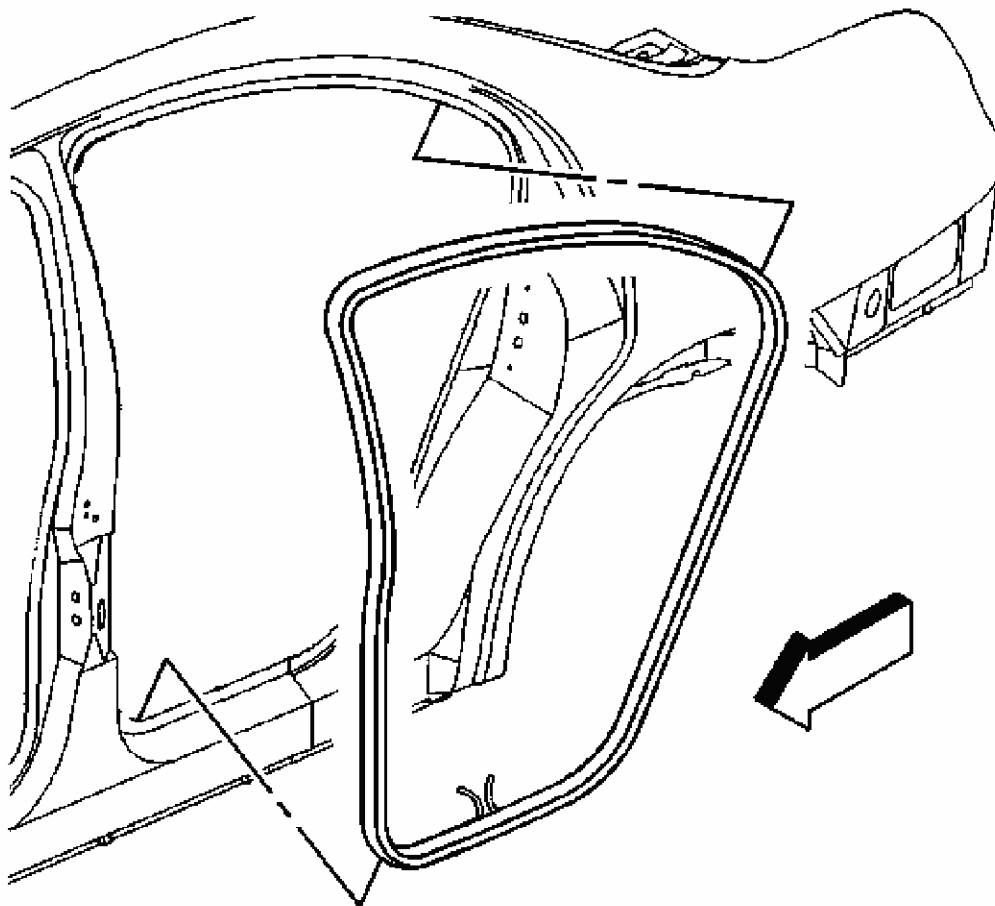


Fig. 81: View of Rear Door Weatherstrip
Courtesy of GENERAL MOTORS CORP.

1. Remove the carpet retainer. Refer to **Rear Carpet Retainer Replacement** .
2. Start at the rear upper corner of the door opening and pull the weatherstrip away from the door opening flange.
3. Work around the door opening and remove the weatherstrip.

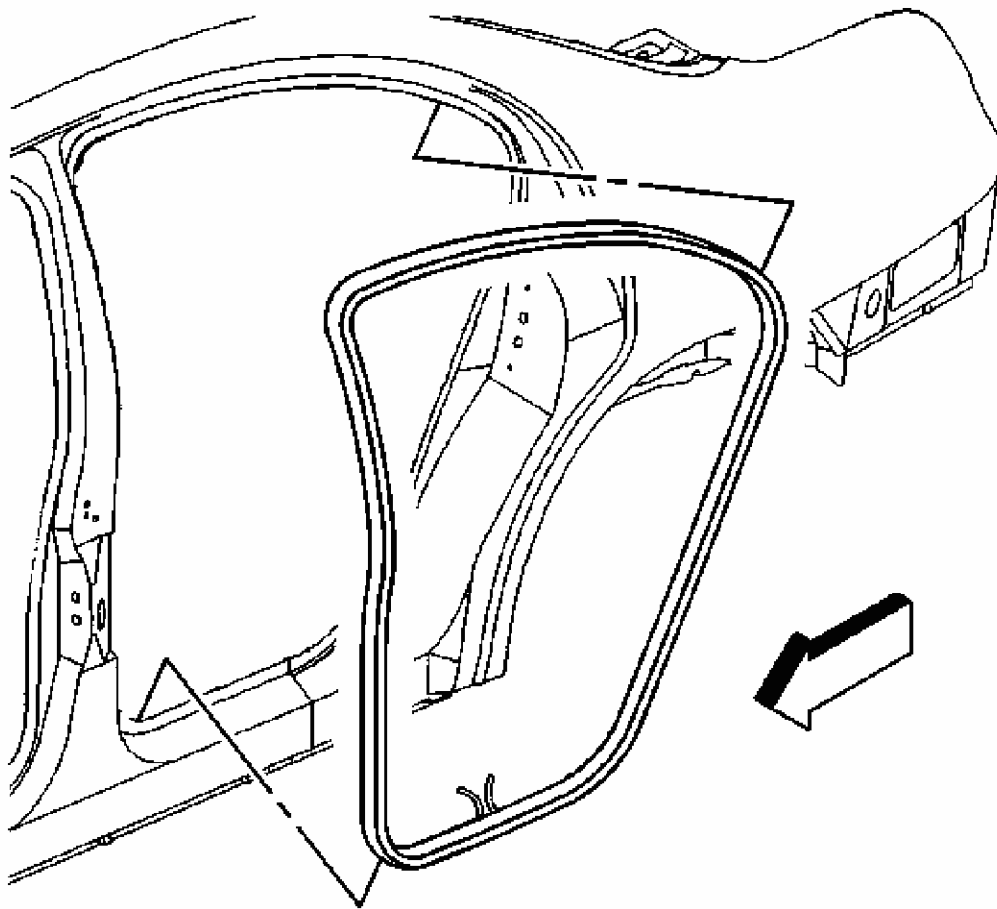
Installation Procedure

Fig. 82: View of Rear Door Weatherstrip
Courtesy of GENERAL MOTORS CORP.

1. Position the paint dot in the upper corner of the center pillar.

IMPORTANT:

- One paint dot on the weatherstrip indicates the RH weatherstrip starting point.
- Two paint dots on the weatherstrip indicates the LH

weatherstrip starting point.

- **The rubber side of the weatherstrip should be outboard of the car.**
2. Working downward along the front edge, install the weatherstrip on the door opening flange ensuring that the carrier is fully seated in the corners.
 3. From the center pillar corner working rearward, install the weatherstrip along the roof rail and the rear of the door opening.
 4. Using the palm of your hand or a rubber mallet, ensure that the weatherstrip is seated on the entire door opening flange.
 5. Using a plastic trim stick or an equivalent, position the close-out lip over the interior trim around the door opening or use the pull-string, on new weatherstrip, under the close-out lip, in order to reposition the lip over the interior trim.
 6. Install the carpet retainer. Refer to **Rear Carpet Retainer Replacement** .

POWER MIRROR REPLACEMENT

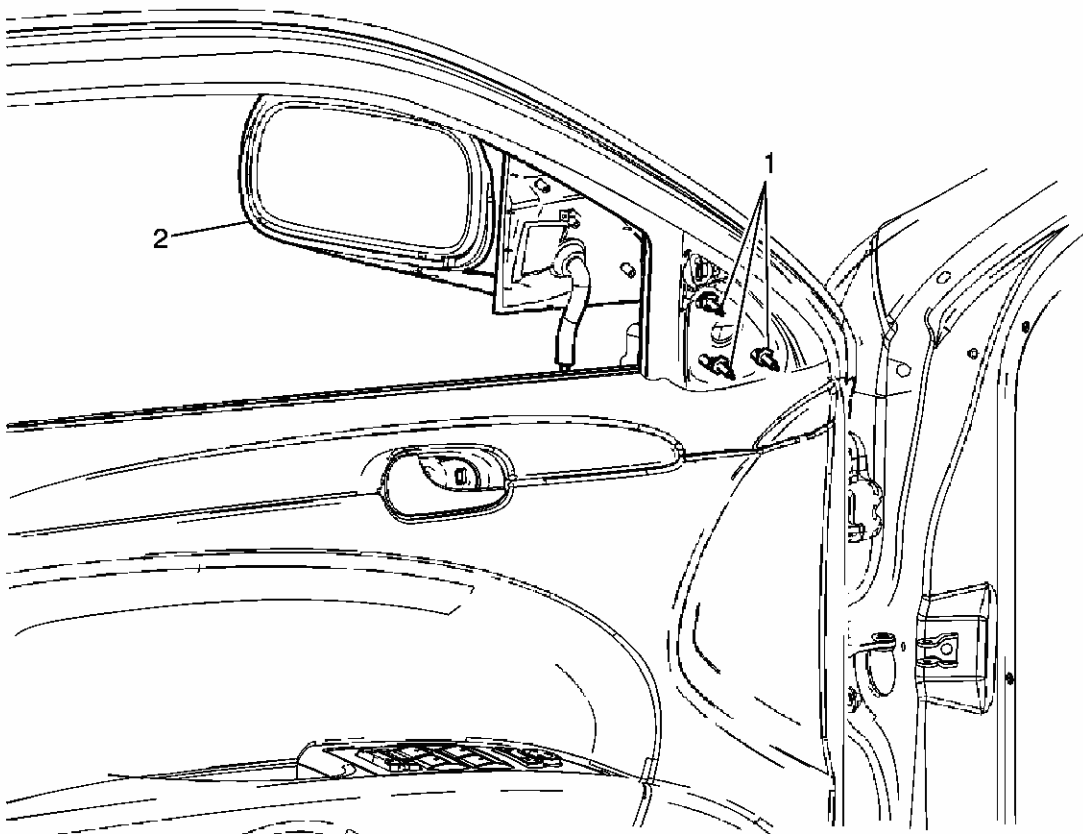


Fig. 83: View Of Power Mirror
Courtesy of GENERAL MOTORS CORP.

Power Mirror Replacement

Callout	Component Name
NOTE: Refer to <u>Fastener Notice</u> .	
Fastener Tightening Specifications: Refer to <u>Fastener Tightening Specifications</u> .	
1	Outside Mirror Nuts (Qty: 3) Tip: Remove mirror access cover. Tighten: 2 N.m (18 lb in)
2	Outside Mirror

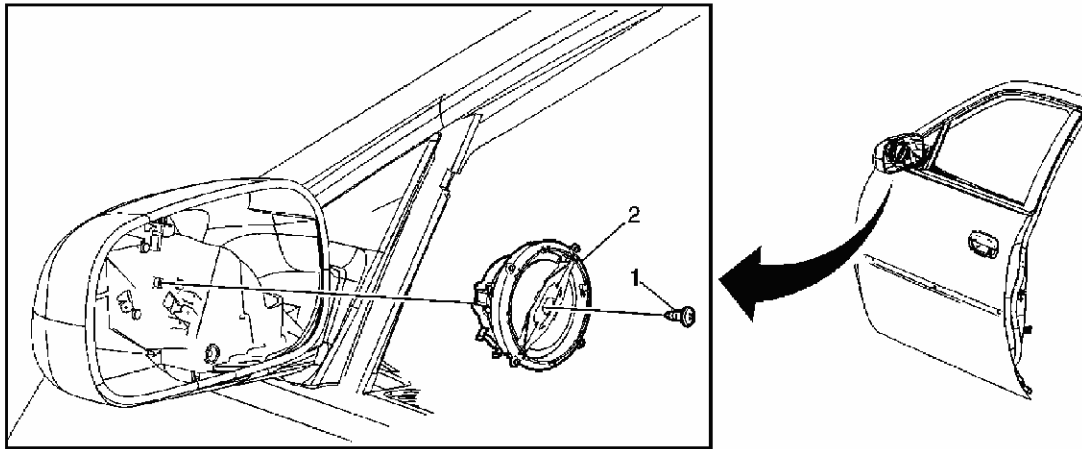
OUTSIDE REARVIEW MIRROR MOTOR REPLACEMENT

Fig. 84: Identifying Outside Rearview Mirror Motor
Courtesy of GENERAL MOTORS CORP.

Outside Rearview Mirror Motor Replacement

Callout	Component Name
NOTE: Refer to <u>Fastener Notice</u> .	
Fastener Tightening Specifications: Refer to <u>Fastener Tightening Specifications</u> . Preliminary Procedure: Remove the door mirror face. Refer to <u>Outside Rearview Mirror Glass Replacement</u> .	
1	Screw, Front Door Mirror Motor Tighten: 2 N.m (18 lb in)
2	Motor, Front Door Mirror Tip: Disconnect the electrical connector from the mirror motor.

OUTSIDE REARVIEW MIRROR GLASS REPLACEMENT

Removal Procedure

CAUTION: Refer to EYE PROTECTION CAUTION .

IMPORTANT: The mirror back is made so that the bottom edge fits into a slot and clip in place. This allow the mirror to rotate.

1. Carefully push the mirror face toward the front of the car and downward on the inner edge, near the front door window glass, to allow access.
2. Grasp the mirror face back and firmly pull it away from the mirror motor and housing.

It will be necessary to use a sharp jerking motion to release it from the housing.

3. Lift the mirror back up and out to release the lower tabs.
4. Disconnect the heated mirror wires, if equipped.

Installation Procedure

1. Connect the heated mirror wires, if equipped.

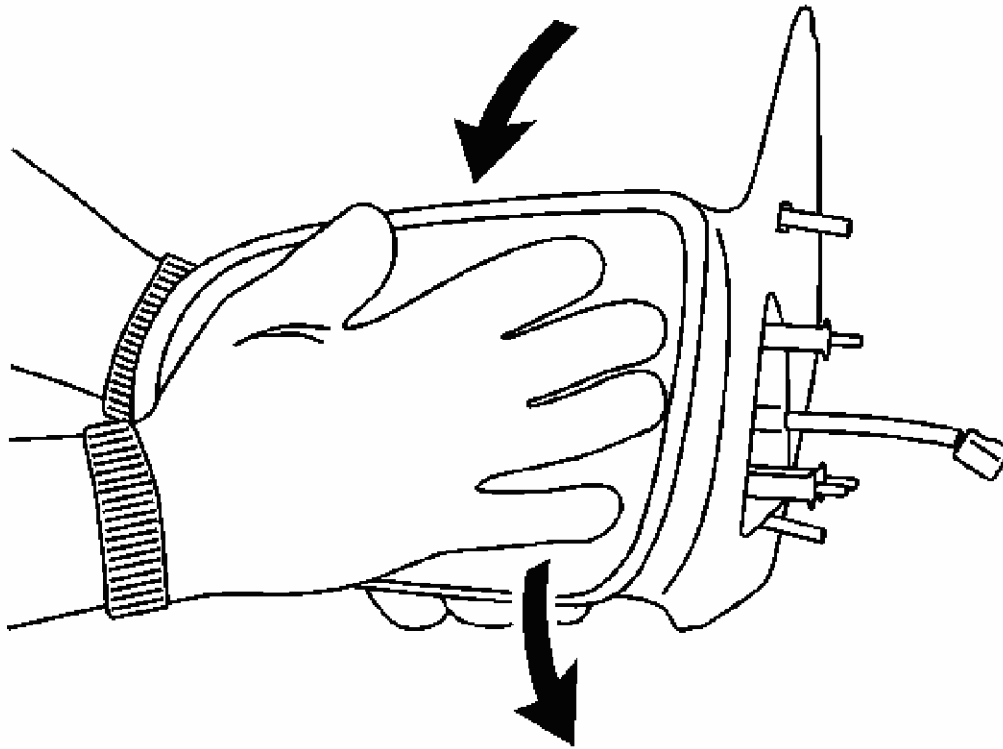


Fig. 85: Mirror Glass & Motor
Courtesy of GENERAL MOTORS CORP.

2. Using the palm of your gloved hand, press firmly on the center of the glass until the case seats onto the motor.

The mirror will make a snapping noise when properly seated.

3. Inspect the mirror for proper operation.

DESCRIPTION AND OPERATION

POWER WINDOWS DESCRIPTION AND OPERATION

Power Windows System Components

The Power Window System consists of the following components:

- Driver Door Module (DDM)
- Passenger Door Module (PDM)

- Left Rear (LR) Door Module
- Right Rear (RR) Door Module
- Window regulator motors in each of the doors
- DDM/PDM Circuit Breaker 25-amp

Power Windows System Controls

The power window switches are located on the driver's door armrest. In addition, each door has a switch for its own window. The front power window switch operates with two positions for both up and down movement and the rear power window switch operates with one position for up and two positions for down movement. Press the switch to the first position to lower the window to the desired level. Pull the switch up to raise the window. The vehicle has Retained Accessory Power (RAP) that allows you to use the power windows once the ignition has been turned off. The DDM and the PDM communicate over the GMLAN serial data line. The DDM and PDM communicate with the Rear Window switches and all the window motors over a Linear Interconnect Network (LIN) to perform the system functions. The functions of UP, Down, Express-Up or Express-Down are controlled by messages sent over the LIN buss from the window switches to the logic portion of the window motor assemblies. Power is provided from the 25 A circuit breaker to the window motors when the ignition is ON or if the vehicle is in RAP. An internal switched Ground is supplied by the window motor when commanded by a LIN message. The DDM and PDM store trouble codes for faults in the power window system. If a fault code is set the power window operation function may be inhibited. It is necessary to use a scan tool to check for power window system fault codes. There are no Driver Information Center (DIC) or Instrument Panel Cluster (IPC) telltales or warning for these faults.

Express-Down Window

This feature is on all windows. Press the switch to the second position and release the switch to activate the express-down feature. To stop the window as it is lowering, press down or pull up briefly on the switch again.

Express-Up Window

This feature is on the front windows. Pull the switch up to the second position and release the switch to activate the express-up feature. To stop the window as it is raising, pull up or press down briefly on the switch again.

Programming the Power Windows

If the battery on your vehicle has been recharged, disconnected or is not working, you will need to reprogram each front power window for the express-up feature to work. Before reprogramming, you will need to replace or recharge your vehicle's battery.

To program each front window, follow these steps:

1. With the ignition in ACCESSORY, RUN or when Retained Accessory Power (RAP) is active, close all doors.
2. Press and hold the power window switch until the window is fully open.
3. Pull the power window switch up until the window is fully closed.
4. Continue holding the switch up for approximately two seconds after the window is completely closed.

The window is now reprogrammed. Repeat the process for the other windows.

Express Window Anti-Pinch Feature

If any object is in the path of the window when the express-up is active, the window will stop at the obstruction and auto-reverse to a preset factory position. Weather conditions such as severe icing may also cause the window to auto-reverse. The window will return to normal operation once the obstruction or condition is removed.

Express Window Anti-Pinch Override

CAUTION: If express override is activated, the window will not reverse automatically. You or others could be injured and the window could be damaged. Before you use express override, make sure that all people and obstructions are clear of the window path.

In an emergency, the anti-pinch feature can be overridden in a supervised mode. Hold the window switch all the way up to the second position. The window will rise for as long as the switch is held. Once the switch is released, the express mode is re-activated.

In this mode, the window can still close on an object in its path. Use care when using the override mode.

Window Lockout

The rear window lockout button is located on the driver's door armrest near the window switches. Press the right side of the button to disable the rear window controls. The light on the button will illuminate, indicating the feature is in use. The rear windows still can be raised or lowered using the driver's window switches when the lockout feature is active. To restore power to the rear windows, press the button again. The light on the button will go out.

POWER DOOR LATCH DESCRIPTION AND OPERATION

Power Door Latch System Components

- Remote control door lock receiver (RCDLR) - GMLAN device that provides passive keyless entry status information to the DDM and PDM
- Driver door module (DDM) - GMLAN device that receives door handle switch inputs and controls the power door latches
- Passenger door module (PDM) - GMLAN device that receives door handle switch inputs and controls the power door latches
- Door handle assembly - includes the lift handle and unlatch enable switches on the driver and front
- Power door latches - electrically operated door latches in the driver and front passenger doors
- DRIVER DR MOD 10 A fuse
- FRT PASS DR MOD 15 A fuse

Power Door Latch Controls

Control of the power door latches is dependent on the door lock status. If the status of the door lock system is UNLOCK, the power door latches will electrically release after lifting the exterior door handle. If the status of the door lock system is LOCK, one of the following inputs will be required before the latch will release:

- A door unlock switch activation
- A door key cylinder unlock switch activation
- An active keyless entry unlock command
- A passive keyless entry unlock command message is received by the DDM or PDM from the RCDLR

Once any of the above inputs has been received, the power door latches will electrically release after lifting the exterior door handle.

The interior door handles provide a mechanical link between the handle and the latch and requires no electrical inputs or outputs to release the door latch.

For further information on the power door lock status, refer to **Power Door Locks**

Description and Operation. For further information on the active and passive keyless entry system, refer to **Keyless Entry System Description and Operation** in Keyless Entry.

Power Door Latch Unlatch Operation

When either exterior door handle is lifted, switched ground signals are sent to the DDM or PDM and the RCDLR through the LF or RF door handle switch signal circuits. Upon receipt of these inputs, the DDM or PDM and the RCDLR will check the door lock status of the system as described above. Once the enable criteria has been met, the DDM or PDM will

supply power and ground to door latch control circuits and the door will release.

POWER DOOR LOCKS DESCRIPTION AND OPERATION

Power Door Lock Components

The power door lock system consists of the following components:

- Driver door lock switch
- Passenger door lock switch
- Driver door switch assembly (DDSA)
- Driver door module (DDM)
- Passenger door module (PDM)
- Left rear door module (LRDM)
- Right rear door module (RRDM)
- Driver door lock actuator
- Passenger door lock actuator
- Left rear door lock actuator
- Right rear door lock actuator
- Driver door cylinder unlock switch
- GMLAN data circuit
- Power door serial data circuit
- DRVMDL 10-amp fuse, DDSA and DDM logic, DDM internal driver operation
- PASS MDL 10-amp fuse, PDM logic and internal driver operation
- RRDR MDL 10-amp fuse, LRDM and RRDM logic and internal driver operation

Door Lock System Controls

The power door lock system can be controlled by any of the following:

- A power door lock switch activation
- A keyless entry transmission
- A driver door key cylinder unlock switch activation
- An automatic door lock function

Power Door Lock Operation

The Power Door Lock shall be a single momentary rocker type switch. The normal resting state shall be the center position. The door shall be locked when the switch is rocked inboard and shall be unlocked when the switch is rocked outboard. The lock and unlock ISO graphic symbols shall be located on the switch and shall have back-lighting.

The front passenger door interior lock switch is wired to the front passenger door module (PDM). The driver door interior lock switch is wired to the driver door switch assembly (DDSA). Interior lock switches are not provided for the rear doors. The DDSA and the PDM send the lock switch requests to the driver door module (DDM) over the power door serial data circuit. The DDM then sends the lock requests to the body control module (BCM) over the GMLAN data circuits.

The door lock operation modes are controlled by the BCM. The BCM examines the requested lock switch requests from the DDM or the remote function actuator (RFA). The BCM also examines the transmission shift selector position and ignition switch position information available over the Class 2 serial data circuits. If the BCM determines that a lock or unlock function is permitted, it sends a GMLAN message back to the DDM commanding the DDM to perform that function. The DDM then locks or unlocks the driver door and sends commands to the rest of the door modules, via the power door serial data circuit, to lock or unlock their respective doors.

Door Modules Power and Ground

In order to control power door lock operations, as well as other door functions, door modules must be powered up. For this purpose, battery voltage is supplied from the rear fuse block, through separate circuits, to each door module. Each door module is separately grounded through a ground stake. The door modules also use these voltage and ground supplies to provide power and ground to their associated lock actuators and lock switches. The rear doors, however, are not equipped with lock switches. In addition, the front door modules use these voltage and ground supplies for outside rearview mirror operations.

The driver door switch assembly (DDSA) battery voltage circuit is fed, through the driver door module (DDM), by the DRVMDL 10-amp fuse located in the Rear Fuse Block.

The driver door module (DDM) battery voltage circuit is fed by the DRVMDL 10-amp fuse located in the Rear Fuse Block.

The passenger door module (PDM) battery voltage circuit is fed by the PASS MDL 10-amp fuse located in the Rear Fuse Block.

The left rear door module (LRDM) and right rear door module (RRDM) battery voltage circuits are both fed by the RRDR MDL 10-amp fuse located in the Rear Fuse Block.

These circuits are in the C1 harness connector of each door module and must not be confused with the door modules voltage and ground circuits that are used exclusively to drive the power window motors.

Front Passenger Door Power Lock Switch

In order to receive a signal from its associated door lock switch, the front passenger door

module supplies battery positive voltage and ground to the contacts of the switch. There are 2 circuits for battery positive voltage, one for a lock signal and one for an unlock signal. The module supplies ground to the switch via a third circuit. When the switch is activated for a lock or unlock function, the contacts for that function are closed to ground and voltage flows through the switch, providing the module with the necessary signal input.

Driver Door Power Lock Switch

The driver door lock switch is similar to the passenger door lock switch, but it is wired to the driver door switch assembly (DDSA), and, for a ground circuit, to the driver door module (DDM). It also works the same way as the passenger lock switch works, but the lock switch signal input information is detected and processed by the DDSA. The DDSA has two circuits that supply 5 volts to the contacts of the driver door lock switch, one for a lock signal and one for an unlock signal. The driver door lock switch ground circuit is provided by the DDM. When the lock switch is activated to lock or unlock, the contacts for that function are closed to ground, the voltage flows through the switch and is detected by the DDSA. The DDSA then relays the lock switch information to the driver door module via the power door GMLAN data circuit.

Power Door Lock Motors

Each door module supplies battery positive voltage and ground, through the door lock actuator motor control circuits to its associated door lock actuator motor. The power door lock motors are reversible. The function performed by the lock motor, Lock or Unlock, depends on which motor control circuit the voltage is applied to and which motor control circuit the ground is applied to. To perform a lock function, the door module applies battery voltage to the door lock motor Lock circuit and ground to the door lock motor Unlock circuit. To perform an Unlock function, the door module reverses the polarity, applying battery voltage to the door lock motor Unlock circuit and ground to the door lock motor Lock circuit.

Automatic Door Locks

The automatic door lock system provides for locking or unlocking all or one of the doors when shifting the transmission in and out of PARK, or, when turning the ignition key to the OFF position. This system is commanded according to the information stored in the BCM. The body control module (BCM) receives the features selected by the driver from the driver information center (DIC). The BCM commands the driver door module (DDM) which in turn commands the individual passenger door modules. For customized selections available and programming instructions, refer to: **Personalization Description and Operation**

Anti-Lockout feature

Leaving the key in the ignition with any door open will disable the use of the power door locks and the Remote Keyless Entry (RKE) lock function.

The anti-lockout feature can be overridden by holding the lock switch in the LOCK position for more than 3 seconds.

Central Door Unlock

The central door unlock feature provides a way to unlock all of the passenger doors while using the door key to unlock the driver door. The feature is controlled by the driver door module (DDM), the driver door lock cylinder and the driver door cylinder switch, which is an integral part of the driver door lock actuator.

The driver door lock cylinder, which is mounted to the exterior of the driver door, is connected to the driver door cylinder switch by means of a mechanical rod. In order to receive the antecessor signal from the driver door cylinder switch, the DDM supplies battery voltage, through the door key switch signal circuit and ground through the ground circuit, to the normally open contacts of the switch. When the door key is inserted into the driver door lock cylinder and turned to the Unlock position, the contacts of the driver door cylinder switch close, voltage from the DDM flows through the switch and the DDM recognizes the voltage flow as a signal input. The DDM determines that a central door unlock request has been made when either one of the following switch activation methods is used:

- The driver door cylinder switch contacts are continuously closed for longer than 3 seconds.
- The driver door cylinder switch contacts are closed twice in 3 seconds.

The DDM sends a GMLAN message to the body control module (BCM) indicating either one of the above activations. The BCM sends a Class 2 message to the DDM to unlock all doors. The DDM sends a power door serial data message to the other door modules to unlock their respective doors.

Delayed Locking feature

This personalization feature permits the delay of all door locking until 5 seconds after the last door is closed. This feature is controlled by the body control module (BCM) which operates based on data received over the GMLAN data circuits.

1. When the lock function is requested, either by the remote function actuator (RFA) or the driver door module (DDM) while the drivers door is open and the ignition key is removed from the ignition, the BCM commands the radio, via the GMLAN data circuit, to sound the chime 3 times to signal that the delayed locking is active.
2. When the DDM detects that the driver door is closed and receives the message from the other door modules that their respective doors are also closed, it sends a GMLAN message to the BCM.
3. The BCM waits for 5 seconds, then sends the GMLAN message to the DDM to lock the doors. The DDM locks the driver door and sends the power door serial data message to

the passenger door modules to lock their respective doors.

If any door is opened during the 5 second delay period, the BCM resets the timer and waits until it again receives the doors closed message from the DDM to restart the delay period.

Pressing a power lock switch on any door or on the remote transmitter for the RFA causes the BCM to override this feature and lock all doors immediately.

To program the delayed locking feature, refer to **Personalization Description and Operation** .

DOOR AJAR INDICATOR DESCRIPTION AND OPERATION

Door Ajar Indicator System Components

The door ajar indicator system consists of the following components.

- Driver door module (DDM) - GMLAN device that receives the switched input from the door ajar switches and communicates the status to the Instrument Panel Cluster (IPC)
- Passenger front door module (PDM) - GMLAN device that receives the switched input from the door ajar switches and communicates the status to the Instrument Panel Cluster (IPC)
- Left rear door module (LRDM) - GMLAN device that receives the switched input from the door ajar switches and communicates the status to the Instrument Panel Cluster (IPC)
- Right rear door module (RRDM) - GMLAN device that receives the switched input from the door ajar switches and communicates the status to the Instrument Panel Cluster (IPC)
- Driver information center (DIC) - Part of the Instrument Panel Cluster (IPC)
- Integrated radio chassis (IRC) - GMLAN device that will provide an audible warning for the door ajar indicator system
- Driver door ajar switch - part of the door latch and provides a switched ground signal for both door ajar and door open
- Passenger door ajar switch - part of the door latch and provides a switched ground signal for both door ajar and door open
- Left rear door ajar switch - part of the door latch and provides a switched ground signal for both door ajar and door open
- Right rear door ajar switch - part of the door latch and provides a switched ground signal for both door ajar and door open

The door ajar indicator system function is to alert the vehicle operator when a vehicle door has inadvertently been left ajar or open. Failure of the door ajar indicator system does not affect door locks or any other vehicle system.

Driver Door Ajar Switch

The DDM receives a discrete input from the driver door ajar switch. The IPC and IRC receive the status of the driver door from the DDM via GMLAN serial data. When the driver door is open/ajar and the vehicle is in any gear other than PARK, the driver information center (DIC) will display DRIVER DOOR AJAR. If the door is still ajar and the vehicles speed is greater than 4.8 km/h (3 mph) the DDM will send GMLAN serial data message to the IRC requesting 5 chimes to sound.

Passenger Door Ajar Switch

The PDM receives a discrete input from the passenger front door ajar switch. The IPC and IRC receive the status of the passenger door from the PDM via GMLAN serial data. When the passenger door is open/ajar and the vehicle is in any gear other than PARK, the driver information center (DIC) will display PASSENGER DOOR AJAR. If the door is still ajar when the vehicles speed is greater than 4.8 km/h (3 mph) the PDM will send a GMLAN serial data message to the IRC requesting 5 chimes to sound.

Left Rear Door Ajar Switch

The LRDM receives a discrete input from the left rear door ajar switch. The IPC and IRC receive the status of the left rear door from the LRDM via GMLAN serial data. When the left rear door is open/ajar and the vehicle is in any gear other than PARK, the driver information center (DIC) will display LEFT REAR DOOR AJAR. If the door is still ajar when the vehicles speed is greater than 4.8 km/h (3 mph) the LRDM will send a GMLAN serial data message to the IRC requesting 5 chimes to sound.

Right Rear Door Ajar Switch

The RRDM receives a discrete input from the right rear door ajar switch. The IPC and IRC receive the status of the right rear door from the RRDM via GMLAN serial data. When the right rear door is open/ajar and the vehicle is in any gear other than PARK, the driver information center (DIC) will display RIGHT REAR DOOR AJAR. If the door is still ajar when the vehicles speed is greater than 4.8 km/h (3 mph) the RRDM will send a GMLAN serial data message to the IRC requesting 5 chimes to sound.

OUTSIDE MIRROR DESCRIPTION AND OPERATION

Outside Mirror System Components

The power outside mirror system consists of the following components:

- Driver door switch assembly (DDSA)
- Driver door module (DDM)
- Passenger door module (PDM)
- Driver outside mirror

- Passenger outside mirror
- Class 2 serial data circuit
- Power door serial data circuit
- DRV MDL 10A fuse, DDSA and DDM logic, DDM internal driver operation
- PASS MDL 10A fuse, PDM logic and internal driver operation

Driver and Passenger Outside Mirror Operation

In order to control outside rear view mirror adjustments, two switches are contained within the driver door switch assembly (DDSA). These are the mirror select switch and the mirror position switch. The DDSA reports the activity of these switches to the driver door module (DDM) via the power door serial data circuit. The mirror switches are not serviced separately from the DDSA.

The mirror select switch is used to select which mirror, left or right, is to be moved.

The mirror position switch is used to move the mirror that has been selected to the desired position. When the mirror position switch is activated in a Up, Down, Left or Right direction, the DDSA recognizes the input and sends this data on to the DDM. Depending on which mirror has been selected for adjustment, the DDM either moves the driver door mirror to the requested position or sends a power door serial data message to the front passenger door module (PDM) indicating that the passenger door mirror needs to be moved. The PDM then moves the passenger door mirror to the requested position.

Each mirror has two reversible motors for position adjustment. The door modules control the reversible motors by applying battery voltage and ground to these motors.

Door Modules Power and Ground

In order to control outside rearview mirror operations, as well as other door functions, the front door modules must be powered up. For this purpose, battery voltage is supplied from the rear fuse block, through separate circuits, to each front door module. Each front door module is separately grounded through a ground stake. The front door modules also use these power and ground supplies to drive the mirror motors and to provide power and ground to window and lock switches and door lock actuators. In addition, the driver door module (DDM) uses these power and ground supplies to power the driver door switch assembly (DDSA) and integral mirror control switches.

The DDSA battery voltage circuit is fed, through the DDM, by the DRVMDL 10 amp fuse located in the Rear Fuse Block.

The DDM battery voltage circuit is fed by the DRVMDL 10 amp fuse located in the Rear Fuse Block.

The PDM battery voltage circuit is fed by the PASS MDL 10 amp fuse located in the Rear Fuse Block.

These circuits are in the C1 harness connector of each front door module and must not be confused with the door modules voltage and ground circuits that are used exclusively to drive the power window motors.

LH Mirror Motors

The direction in which the LH mirror moves depends on which mirror motor control circuit the voltage is applied to and which mirror motor control circuit the ground is applied to. For a LH mirror left movement, the driver door module (DDM) applies battery voltage via the left mirror motor left circuit and ground via the left mirror motor right circuit to the LH mirror horizontal motor. For a LH mirror right movement, the DDM reverses the polarity and applies battery voltage via the left mirror motor right circuit and ground via the left mirror motor left circuit to the LH mirror horizontal motor. For a LH mirror up movement, the DDM applies battery voltage via the left mirror motor up circuit and ground via the left mirror motor down circuit to the LH mirror vertical motor. For a LH mirror down movement, the DDM reverses the polarity and applies battery voltage via the left mirror motor down circuit and ground via the left mirror motor up circuit to the LH mirror vertical motor.

RH Mirror Motors

The RH mirror operates the same as the LH mirror. For a RH mirror left movement, the front passenger door module (PDM) applies battery voltage via the right mirror motor left circuit and ground via the right mirror motor right circuit to the RH mirror horizontal motor. For a RH mirror right movement, the PDM reverses the polarity and applies battery voltage via the right mirror motor right circuit and ground via the right mirror motor left circuit. For a RH mirror up movement, the PDM applies battery voltage via the right mirror motor up circuit and ground via the right mirror motor down circuit to the RH mirror vertical motor. For a RH mirror down movement, the PDM reverses the polarity and applies battery voltage via the right mirror motor down circuit and ground via the right mirror motor up circuit.

Personalization Option and Memory Mirrors

The vehicle may be equipped with the "personalization package" containing memory seats and memory mirrors. However, the front door modules cannot perform memory mirror functions unless the Personalization Option is activated. The dash integration module (DIM) stores the vehicles Personalization Option setting provided at the assembly plant. The DIM reports this Personalization Option setting to both front door modules, as well as other receiving modules, each time the ignition switch is cycled to RUN. The front door modules then store the Personalization Option setting and examine it before making a memory mirrors adjustment.

The Personalization Option setting stored within the front door modules will not change until the Personalization Option setting within the DIM is changed and the ignition switch then

cycled to RUN.

If the Personalization Option is activated on a vehicle that is not equipped with memory, the door modules will erroneously set DTCs B1583, B1593, B1613 and B1623.

Memory Mirrors Operation

The memory mirrors are controlled by the mirror position sensors, the driver door switch assembly (DDSA) and the front door modules. The DDSA decodes memory switch activations while the mirror position sensors provide mirror position information to the front door modules. The front door modules supply voltage and ground to the mirror position sensors, store mirror position information and apply voltage and ground to run the mirror motors.

For memory operations, each outside rearview mirror has four additional circuits and contains a vertical position sensor and a horizontal position sensor. The position sensors, which are potentiometer type sensors, are attached to the corresponding position motor of each mirror and provide constant information, in the form of feedback voltage to the associated door module, to indicate the vertical and horizontal position of the mirror. Each position sensor of each mirror is wired to the corresponding front door module through four circuits to provide mirror location information in the following manner: Each front door module supplies 5 volts reference voltage through a 5 volt reference circuit and ground through a mirror sensor low reference circuit, to the position sensors. Each front door module also supplies 5 volts through the vertical position sensor signal circuit, and, 5 volts through the horizontal position sensor signal circuit, to the corresponding position sensor. When the mirror motors run, the resistance of the attached sensors vary, which in turn, varies the feedback voltage to the door module. Feedback voltage for each sensor varies between 0.25 volts and 4.75 volts.

When mirror positions are programmed into the personalization package, the front door modules store the positions indicated by the feedback voltages of the position sensors. When a memory recall is requested, the door modules compare the feedback voltages indicated by the current mirror positions to the stored feedback voltages. The door modules then move the mirrors until the current feedback voltages match the stored feedback voltage levels.

Memory Mirrors - Parallel Parking Mode

If the vehicle is equipped with memory mirrors, it is equipped with the parallel parking mode feature. For this feature, the driver door module (DDM) communicates with the powertrain control module (PCM) over the class 2 serial data circuit. When the gear selector is shifted to reverse, the PCM transmits this status via a class 2 message to the DDM. The DDM sends this message on to the front passenger door module (PDM) over the power door serial data circuit. The PDM then applies battery voltage and ground to the vertical motor of the RH outside rear view mirror to tilt the mirror down 7 degrees. This allows the driver to see the curb while parallel parking. When the gear selector is shifted out of reverse, the PDM powers the vertical motor of the RH outside rearview mirror to return to the previous position.

Heated Mirrors

The mirrors heat during the defrost/defog cycles for the rear window. The heated mirrors are connected to the driver door module (DDM) and the front passenger door module (PDM). The DDM receives a class 2 message from the instrument panel cluster (IPC) via the rear integration module (RIM) commanding the heated mirrors ON. The DDM also examines information from the dash integration module (DIM) to determine if vehicle conditions are correct for the heated mirrors function to occur. If conditions are correct, the DDM then applies voltage and ground to the driver side mirror heater element and sends a power door serial data message to the PDM to apply voltage and ground to the passenger side mirror heater element.

The DDM supplies battery voltage to the LH outside rearview mirror heating element via the feed circuit and ground via the return circuit.

The PDM supplies battery voltage to the RH outside rearview mirror heating element via the feed circuit and ground via the return circuit.

Automatic Day/Night Feature Operation

The automatic day/night feature of the driver outside rearview mirror is controlled by the inside rearview mirror. The inside rearview mirror supplies a signal and a low reference to the driver outside rearview mirror. The voltage on the signal circuit of the driver outside rearview mirror varies between 0.5-1.5 volts depending on light conditions present at the inside rearview mirror. At night, with the automatic day-night feature enabled, the driver outside rearview mirror will automatically darken with the inside rearview mirror to reduce the glare from the headlamps from behind. The voltage on the signal circuit of the driver outside rearview mirror will be near 1.5 volts. In the daytime, the mirrors are in a normal state. The voltage on the signal circuit of the driver outside rearview mirror may be less than or near 0.5 volts. Refer to **Automatic Day-Night Mirror Description and Operation** in Stationary Windows for further description and operation of the inside rearview mirror.

Turn Signals Indicator Feature

The driver door switch and passenger door switch receive voltage from the BCM turn signal supply voltage circuits for the mirror turn signals. The door switches have no function or control of the mirror turn signals other than a pass through connection for the circuits.

SPECIAL TOOLS AND EQUIPMENT

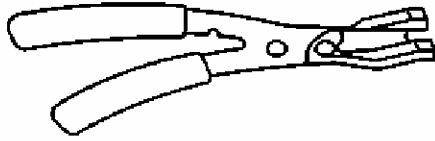
SPECIAL TOOLS

Special Tools

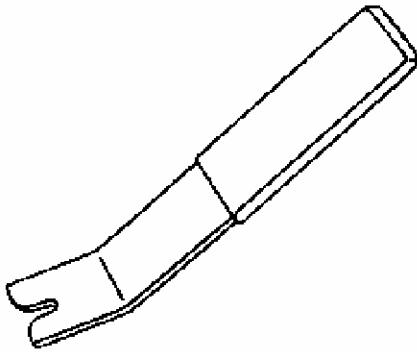
Illustration	Tool Number/Description

2006 Buick Lucerne CXS

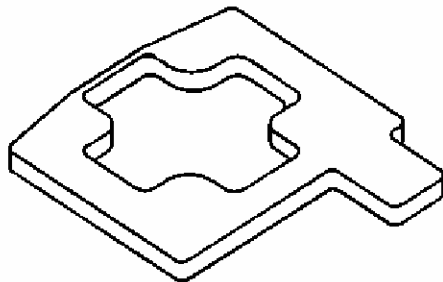
2006 ACCESSORIES & EQUIPMENT Doors - Lucerne



J 36796
Clip Zip Clip Removal Tool



J 38778
Door Trim Pad and Garnish Clip Remover



J 39346-A
Mini-Wedge Door Striker Aligner

2006 Buick Lucerne CXS
2006 ACCESSORIES & EQUIPMENT Doors - Lucerne

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